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REPORT
OF THE
DEPARTMENT OF HEALTH
FOR THE YEAR ENDED
31 MARCH 1965

Presented to the House of Representatives Pursuant to Section 10 of the Health Act 1956

BY AUTHORITY:
R. E. OWEN, GOVERNMENT PRINTER, WELLINGTON, NEW ZEALAND—1965

Price 4s.

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22501291884

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REPORT

The Director-General of Health to the Hon. the Minister of Health, Wellington.

I have the honour to lay before you the annual report of the Department for the year 1964–65.

The vital and medical statistics which appear in the report are for the calendar year 1964. The financial figures and, in particular, the report of the Division of Clinical Services are for the year ended 31 March 1965.

My predecessor, Dr H. B. Turbott, I.S.O., retired at 31 December 1964 as did the Deputy Director-General of Health, Dr R. G. T. Lewis. The Deputy Director-General (Administrative), Mr D. A. Hunn, retired prematurely at the same time on medical grounds.

The vacancies and other consequential senior staff changes have been filled as follows:

Deputy Director-General of Health: Dr G. Blake-Palmer, E.D.
Deputy Director-General (Administrative): Mr A. E. Galletly.
Director, Division of Public Health: Dr G. O. L. Dempster.
Director, Division of Hospitals: Dr J. P. Kennedy.
Chief Executive Officer, Hospitals Division: Mr E. G. Heggie.

Legislatively it was a busy year. Several important amendments were made to the Health Act 1956, and the Smoke Restriction Regulations 1964 represented the first attempt in New Zealand to control, on a national basis, the pollution of air by smoke. The list of infectious diseases scheduled to the Act was slightly revised by the Infectious Diseases Order 1964. The regulations relating to venereal disease were revoked and new regulations were enacted for the same purpose.

The Occupational Therapy Act 1949, the Physiotherapy Act 1949, and the Dietitians Act 1950, were all amended on approximately the same lines as the Nurses and Midwives Act 1945 had been amended in 1963, and the regulations under the first-mentioned Act were revised and re-enacted as the Occupational Therapy Regulations 1964.

Minor amendments, which do not call for comment, were made to the Poisons Act 1960 and the Hospitals Act 1957. The Poisons Regulations 1964, made under the former, contained new schedules of poisons and poisonous substances and considerably revised the pre-existing regulations in various respects. The Hospital Employment Regulations, made under the Hospitals Act 1964, revised in different ways the various sets of regulations, forming the whole, in most cases merely amending the 1963 regulations, but, in the case of nurses, provided new regulations. Other subsidiary legislation enacted under the last-mentioned Act were the Hospital Employees Gratuity Regulations 1964, which revoked the 1962 regulations and made new provision for the same purpose, and the Hospitals Act (Separate Institutions) Amendment Order 1964, which was consequential on one hospital ceasing to be a "separate institution".

The Social Security Act 1964 was a very important measure, consolidating and revising the Social Security Act 1938 and its amendments, but, as the part of the 1938 Act administered by the Department of Health has been thoroughly overhauled by the Social Security Amendment Act 1963, the further amendments made to that Part in 1964 were of comparative insignificance. Consequently, on the 1963 Act seven sets of regulations made under the 1938 Act and administered by the Department of Health were dealt with either by re-enactment in revised form, or amendment, or revocation without re-enactment, in 1964.

The Medical Practitioners Act 1950 was amended in certain respects which do not call for comment.

The Dental Regulations 1964 were made consequentially upon the Dental Act 1963, and sundry amendments were made to the Pharmacy Regulations 1944.

Three new statutes, the Human Tissues Act 1964, the Burial and Cremation Act 1964, and the Plumbers and Gasfitters Registration Act 1964, consolidated, brought up to date, and substantially revised the existing law having effect in those fields. The first was concerned with the removal of human tissue after death for therapeutic purposes and medical education and research, routine post mortem examinations, and the study of bodies at schools of anatomy. The second contained new provision for the registration of gasfitters, and the third abolished various anachronisms relating to cemeteries, which no longer had value or significance, and facilitated the improvement of disused cemeteries.

PART I—BUREAU OF PUBLIC HEALTH SERVICE

1. ENVIRONMENTAL HEALTH

Water Supplies

During 1964 the Local Authorities Loans Board approved loan proposals for water supplies, which were examined by the Department, to a total value of £2,302,600.

There appears to be a more widespread recognition of the need for water treatment, and further progress was made in the improvement of public water supplies. In the more rapidly developing parts of the country water supplies are satisfactory; but many small local authorities do not fulfil their responsibility for supplying water of a sufficiently high quality to the consumer.

In one town the temporary diversion into the mains of water which was contaminated by sewage caused a large outbreak of dysentry. This incident bore out many of the findings in the Board of Health's Report Series No. 10, *An Evaluation of the Administration and Servicing of New Zealand Water Supply Undertakings,* which was published in October 1964. Had the water supply in question been managed better, and been better developed, it is doubtful whether the type of incident which caused the epidemic would have happened.

More local authorities should take advantage of the training offered to water treatment plant operators by the Ministry of Works. It would be an advantage if there were to be at least one senior employee on the staff of even the smallest local authority supplying water, who had had some training in the elements of water hygiene.

Sewerage and Sewage Treatment

The assistance given to the smaller local authorities by the sewage treatment subsidy scheme has caused steady progress to be maintained in some areas of the country towards the provision of adequate sewage treatment. The value of subsidies approved during the year was £68,500. The total value of loan proposals examined was £3,177,500.

In some areas where the rate of growth of population is low, and in other areas, particularly of coastal and lakeside development, the provision of public sewerage and sewage disposal lags behind other amenities. In some areas delays have created a requirement for the expenditure of capital sums in excess of the local authorities' resources.

Six cities have yet to start the construction of improved sewage disposal facilities. Two of them have had their loan proposals approved and have reached the design stage.

Water Pollution Control

The medical officers of health and their staff, acting on behalf of the Pollution Advisory Council, are supervising classified waters in Whangarei and Tauranga Harbours, the Tarawera River, and Manawatu-Oma Rivers. The quality of the water is being monitored and licensed outfalls are being supervised.

Commission of Inquiry on Auckland Drainage

Since the sewage purification plant of the Auckland Metropolitan Drainage Board (now the Drainage Division of the Auckland Regional Authority) was established in 1959–60, there have been many complaints from the residents of Mangere regarding swarms of midges and of offensive smells alleged to originate in the sewage works. These complaints led to the appointment by the Government of a Commission of Inquiry* to inquire into the alleged nuisances.

Food Sanitation

There were 347 cases of food poisoning notified during the year, and this is 88 cases less than in the previous year. The figures compare with the average number of notifications over the past 10 years and do not signify any lowering of the incidence. There were more than 40 reported outbreaks in widely separated areas, and in four instances more than 40 people were affected.

Food Premises

During the year the Department made good progress in implementing a new system for evaluation of standards and the supervision of all food premises.

Progressive totals to date show the average food premises to have reached only 82·38 per cent of compliance with the legal minimum requirements as to structure, equipment, and conduct.

Local authorities cannot regard their food sanitation programme as satisfactory unless 90 per cent of the premises are within 10 per cent of complete compliance, and only seven local authorities of a total of 274 have reached this level.

Health Inspection Services

Steady progress is being made with the changeover of health inspection services to local authorities, and during the year the Department completed satisfactory negotiations with a further 30 local authorities either singly or in groups to employ their own health inspector. Similar proposals are being discussed with a number of local authorities, and the remaining 120 areas serviced by the Department should be further reduced during 1965.

The Department also initiated action for the formation of an additional training course and, with the cooperation of the educational authorities, has started a full-time class at the Auckland Technical Institute. Nine trainee inspectors were sponsored for this course by local authorities, and the required number was made up by enrolling one of the Department's trainees and a trainee sponsored by the Cook Islands Government.

Air Pollution

A major change in legislation concerning air pollution has been the introduction during the year of the Smoke Restriction Regulations 1964 which cover, but for industrial chimneys only, much the same grounds as the Clean Air Act in the United Kingdom. These are permissive

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***Report of Commission to Inquire into Alleged Nuisances in Auckland Metropolitan Drainage District.* Published April 1965.

regulations which become operative in a particular area only at the request of local authority. Thirty local authorities have so far adopted the regulations.

In the general field of air pollution assessment surveys of atmospheric pollutants have continued in the Auckland metropolitan area and on a smaller scale in Lower Hutt, Dunedin, and some areas near Whangarei. The Christchurch survey reached the end of the five-year experimental period, and the results are being studied and should be published towards the end of 1965.

In Rotorua investigation of the hydrogen sulphide problem continues, though now as part of a more comprehensive study of the problems of urbanisation in a geothermally active area. The results of these surveys are valuable in showing the direction in which control measures are most desirable even when the level of pollution revealed is not serious.

The number of registered chemical works processes has increased from 221 to 232 during the year including the major additions of the oil refinery at Marsden Point and a new fertiliser works at Whangarei. Before establishment or extension of such a works or process the proposals are carefully examined to see that the "best practicable means" is adopted to minimise the discharge of any air pollutant. In the important acid-fertiliser industry, great expansion is in hand with the result that proposals for no less than seven new acid plants have been submitted and preliminary consideration given to three new works sites. The new developments for contact acid plants will eliminate all but two of the old chamber plants. In most cases this will be an improvement with the elimination of the reddish coloured fumes of nitrogen oxides which is such a feature of the chamber process. However, the larger size of the new plants has necessitated very careful consideration of control measures where topographical features are difficult or stack height limitations are imposed by adjacent air runways. This latter is becoming a problem as areas of industrial development are frequently quite close to airports. Special investigations in conjunction with the companies concerned are consequently being carried out at Hornby, Ravensbourne, and Gracefield.

The atmospheric effluents from registered processes are measured whenever practicable and as frequently as possible even when there is no complaint. In some cases there are statutory limits and in other cases presumptive limits on the amounts of pollutant that may be discharged. In the fertiliser industry 143 such tests have been made during the year compared with 71 in 1963, this increase being made possible by using some specially trained inspectors of health to do screening tests. Some 18 infringements were detected but these were mostly minor and quickly put right. However, the demand for fertiliser is such that most works are operating close to the limits with no safe margin, an unsatisfactory situation which will continue until the new plant is commissioned. A complicating factor too has been the necessity to import Florida and North African rock phosphates which are more difficult than the Pacific island rocks mainly used since the war. It has been necessary to advise the industry that den gas scrubbers must be improved to handle the products of treatment of 100 per cent Florida rock.

Such statutory tests are also made on lead works, the most troublesome in the past being the battery smelting works. One has been shut down, and the remaining three all are now equipped for high standards of control.

Surveys of dust discharged were made on a number of works. This involves an exacting technique and is consequently time consuming. The measurement of dust from cement works is, in particular, a major undertaking, but two more works surveys were completed during the year, leaving only one small works not so far covered in detail. There had been complaints about one of these works, and recommendations for improvements were made. In this industry new kiln capacity under construction or projected will add 450,000 tons of extra capacity a year. This could result in up to 40,000 tons of dust being discharged to the atmosphere every year, but in fact the new kilns, with the exception of one in a non-critical area, will be equipped with high-efficiency electrostatic filters, and three of the older kilns will also be so equipped so that total dust discharged should be little more and possibly less than at present.

The disposal of liquid wastes can cause air pollution, and the results of a survey made in Invercargill with regard to the disposal of meat works wastes which were found to cause offensive odours over a radius of some miles. Many other problems have been investigated during the year, and a fuller report is available from the Department on request.

2. PUBLIC HEALTH SERVICES

(a) Communicable Diseases and Quarantine

During the year *Trends in Notifiable Disease* was published as No. 18 in the Department's Special Report Series. It clearly outlines the success in communicable disease control achieved during the past 40 years.

The Health Amendment Act 1964 gave powers to medical officers of health to deal with outbreaks of infectious disease during a state of national major disaster declared under the Civil Defence Act 1962.

Tables 8 a–e show the incidence of confirmed cases of notifiable disease during 1964.

Bacillary Dysentry

There were 1,123 notifications – a considerable increase on last year (489 cases). This was due largely to Sonne dysentry in the lower half of the South Island. Over 68 per cent of all notifications came from this area. The outbreak began in Invercargill, spread north to Ashburton, and included staff and patients in two hospitals.

Enteric Fever (Typhoid and Paratyphoid)

The seven notifications of paratyphoid fever and 38 notifications of typhoid fever were widely distributed among North Island health districts. Two in the Hutt district were due to a phage type (E9.) not found in New Zealand before. Another case of this type occurred in Wanganui district later in the year, but no connection as to the earlier cases could be established. Only five cases (three paratyphoid and two typhoid) were notified from the South Island. All five were from Christchurch health district, and the typhoid cases were both infected outside New Zealand.

Investigation of these cases brought to light several new carriers of typhoid fever, and these have been added to the register maintained at the National Health Institute. All known carriers are kept under strict surveillance.

Food Poisoning

See Food Sanitation, page 8.

Hydatids

Fifty-nine new cases were registered in 1963. This is the lowest annual total since the Hydatids Index was established in 1946.

A survey of hospital admissions made by the medical statistician in February showed that the hospital board areas in which the highest incidence of hydatid disease was reported between 1954–61 are Waipawa and Waiapu (six times the New Zealand average), Opotiki and Wairoa (four times the New Zealand average), and Cook (three times the New Zealand average).

On the basis of the new cases of hydatid disease reported from public hospitals there is some evidence that the disease is becoming less common in children under 10 years of age and in young people aged between 10 and 19 years. These age-specific rates for males and females combined are given in the table below:

New Cases of Hydatids

(Males and Females – Age Specific Rates per 100,000)

	Under 10 Years	10–19 Years
1946–1949	3·6	4·8
1958–1961	2·0	3·0
1961–1963	1·0	2·1

The 1961–63 figures should be regarded as provisional as they were compiled manually and so lack the verification possible with punch-card analysis.

Infective Hepatitis

The 2,223 notifications are only 70 fewer than last year. Children and young adults were most affected, and nearly 63 per cent of notifications concerned people under 25 years of age. Several outbreaks were associated with schools and one with the children's wards of a psychiatric hospital. Education directed towards good environmental health and to personal hygiene has been continued in all districts.

Leptospiral Infections

There were 169 notifications of which 100 were notified during October, November, and December. Four districts accounted for 134 of the notifications – Hamilton 59, New Plymouth 34, Whangarei 25, and Takapuna 16. Most patients were either farmers or were connected with animals in some way. The pilot immunisation scheme in Hamilton district should be completed during 1965.

Poliomyelitis

There have been five major outbreaks of poliomyelitis in the last 40 years. In 1925 there were 1,159 cases notified and 178 people died. In 1937 there were 816 notifications, 1,318 in 1948–49, 1,273 in 1952–53, and 1,600 in 1956. In these last four outbreaks there was approximately one death to 18 notifications. A smaller outbreak occurred in 1961 with 214 notifications and seven deaths.

Through the benefits of oral vaccine another year has passed without a confirmed case of poliomyelitis, but medical officers of health continue to report the failure of parents to protect their children against this disease. For example, one medical officer of health advises that out of 3,926 babies born the first dose of vaccine was given to 3,602 of them. Of these, 2,961 were brought back in a month for the second dose and only 2,527 for the third dose six months later. Thus, over 35 per cent of the babies failed to receive the full course which is essential to maintain adequate individual and community protection.

Salmonella Infections

The 317 notifications are the most since salmonellosis became notifiable in 1952 – the previous highest figure was 135 in 1958. Fifty-nine guests were affected at a wedding, and prompt notification enabled Salmonellae to be isolated from cream which, in turn, was probably contaminated by poultry. In another outbreak of 36 cases the source was traced to an infected food caterer, and in a small family outbreak seven cases were due to fish infected during preparation for eating.

Venereal Disease

Venereal disease is not notifiable in New Zealand, but returns of the number of cases seen for the first time at clinics run by the hospitals in Auckland, Wellington, Christchurch, and Dunedin are given in table 18. The total number of syphilis cases rose from 62 in 1963 to 83 in 1964, the most marked rise being in Christchurch, where 14 males were seen compared with four in 1963. The increase in the total numbers suffering from gonorrhoea rose from 1,186 in 1963 to 1,404 in 1964.

In June a conference was held of venereal disease specialists and departmental officers. It was agreed that some increase in these diseases was evident, especially among young people and seasonal workers. As a result, the Department is increasing its health education activities, and methods of improving contact tracing are being investigated.

Revised Venereal Disease Regulations were reviewed at the above meeting and have since replaced the 1941 regulations.

Quarantine Arrangements and Vector Control

No cases of quarantinable diseases were reported during 1964. Regular inspections of sanitary aerodromes for evidence of mosquito breeding have been satisfactory.

(b) Health Education

National Health Programmes

The following received special emphasis.

Fluoridation of Water Supplies—Taumarunui began fluoridation this year and is the sixth community to do so. Sixteen other communities have approved fluoridation in principle, and the largest, Wellington, serving a population of about 200,000, anticipates beginning in 1965.

World Health Day (7 April 1964)—The theme "No Truce for Tuberculosis" was promoted widely.

Cancer Education Week (May 1964)—The Department combined with the Cancer Society of New Zealand in a special campaign the theme for which was "Fight Cancer With Knowledge". Emphasis was laid on the importance of early detection and on the facilities available.

Holiday Health Safety—In all health districts this summer there was an education programme for holiday health and safety.

Hydatid Disease—All districts are working with officers of the Department of Agriculture and the National Hydatids Council in the campaign against hydatids disease. This is a particular problem in the Gisborne health district where a campaign lasting three months was organised to cover adults and school children.

Campaign Against Cigarette Smoking—This continues in all districts as a national programme.

A report *Smoking Habits of New Zealand Doctors* was published in the Department's Special Report Series (No. 16). It showed that over 60 per cent of the doctors do not smoke cigarettes. The percentage of non-smokers was highest at the youngest age groups.

Education for Family Living—Medical officers, nurses, and health education officers are being asked increasingly to assist with programmes of education for family living. Talks and discussions have been held with adult groups, adolescent groups, and in schools. Useful material has been gathered about problems of concern to young people, and a pamphlet designed to help with these is being prepared.

The set of five pamphlets on sex has been revised and republished.

District Health Programmes

"Westport Health Week" received vigorous support from the local people and demonstrated the value of this type of community effort.

"Resuscitation Week" was held in Rotorua with assistance from several organisations including the Fire Brigade, swimming clubs, and the St. John Ambulance Association.

Several districts campaigned for better food handling, and New Plymouth district held a "Milk Week" at Eltham with the aim of demonstrating the value of milk as a food and the need for clean handling and storage in the home. Similarly, several districts featured careful handling and storage of poisons in the home and garden.

Two districts, Christchurch and Gisborne, combined with other organisations to promote an educational campaign against house flies, and a tuberculosis detection programme in Auckland was a large health education component. It resulted in approximately 60 per cent of the population over 15 years of age having a chest X-Ray.

In Nelson and Hamilton attention was given to animal diseases transmissible to man, and at the request of officers of the National Safety Association several districts assisted in farm-safety programmes. Health education in industry is being developed in some districts.

(c) Maternal and Child Health

Maternal Welfare

For the third year in succession there has been a decline both in the total number of births and in the combined European and Maori birth-rate which is now 24·0 per 1,000 population. The drop in 1964 was steeper than in the previous years and occurred for the first time in both races. There was a decrease of 3·4 per cent in the total births of 62,459 compared with the 1963 total (see further comment under Medical Statistics).

Maternal Mortality

Compared with other countries New Zealand has a very low maternal mortality. The combined races rate was 0·32, the European rate being 0·26 and the Maori 0·75 per 1,000 births. This, however, represents 20 maternal deaths, and the Maori contribution of six deaths is obviously disproportionately high.

The details of maternal deaths registered in 1964 are given in table 16 of the appendix.

Infant Mortality

(See tables 3, 5, 6, and 7 and comment under Medical Statistics.)

The infant death rate per 1,000 live births for 1964, with the 1963 figures in brackets, were 17·5 (17·8) for the European, 30·0 (32·6) for the Maori, and 19·1 (19·6) for both races combined. All three rates represent new low records for this country, but the reduction in the Maori rate is especially encouraging.

Table 5 in the appendix gives the international comparison.

Infant mortality is highest during the first week of life. When the loss during this period is added to the number of still births, the result is the perinatal loss.

Although the absolute numbers and the rate of perinatal loss have fallen substantially over recent years, there were 1,558 deaths in the perinatal periods in 1963 (latest figures available), accounting for 74·4 per cent of the loss of life between the twenty-eighth week of pregnancy and the end of the first year. For the European population the rate was higher, at 78·1 per cent.

It is interesting to note that New Zealand is close to having the world's lowest rate in the perinatal period. The following figures cover the year 1962, the latest year for which figures for other countries were available.

	Perinatal Mortality Rate* per 1,000 Total Births
New Zealand (European)	23·5
New Zealand (total population)	24·0
Sweden	23·4
Norway	23·7
Netherlands	25·7

Studies have shown that perinatal mortality is influenced by maternal age and parity, previous obstetric history, and social class.

A perinatal certificate is soon to be introduced into New Zealand which will elicit the important clinical conditions in the mother as well as the clinical and pathological data on the baby. The combinations of conditions will be able to be evaluated by computers, and this will assist considerably in ascertaining more accurately the factors involved in death.

It is hoped that this may eventually lead to the prevention of some of these deaths.

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*The perinatal mortality rate is the proportion of deaths in the perinatal period per 1,000 total births (that is, sum of live births and still births).

General

Ante-natal Education—In recent years there has been a great increase in ante-natal education, the principal result of which has been an improvement in the mental and physical health of mothers and in the welfare of their babies.

The pioneer work in this field was done by the Parents' Centre Organisation and the Auckland office of the Health Department, but hospital boards, as detailed in a recent survey, have been and are extending their services to cover this aspect of maternal health.

The booklet *Mother and Baby,* which is to replace the well known *Suggestions to Expectant Mothers* first published in the 1920s, is at present in the hands of the Government Printer. A shortened pictorial version of this new publication entitled *The Story of Glynis* has now been printed and will be used in ante-natal premises and Plunket rooms.

Infection—During the year outbreaks of infection occurred in some maternity hospitals which in certain instances led to their closing for short periods. Thanks to the vigilance of the staff of hospitals, district offices, and the National Health Institute, the overall situation is satisfactory. However, the importance of early and full investigation of each outbreak cannot be stressed too strongly.

The Maternity Services Committee—The Maternity Services Committee has had an active year. An outline plan has been completed for the notification and investigation of maternal deaths, and this scheme is now being considered by the organisations involved. A perinatal death certificate has been prepared and will soon be in use. A maternity patient record card has been devised, which can be carried by an expectant mother and which will give essential medical details for use in case of emergency. Last year a recommendation was made that a laboratory be established for the calibration of trilene inhalers and this has been implemented. It is considered that this is an important step in improving the safety of analgesia during childbirth.

In addition to the foregoing the Committee has given valuable assistance and advice on perinatal toilets, of which a survey was undertaken, on the proposed new midwifery curriculum, and on the introduction of gas and oxygen analgesia. It is proposed to survey the obstetric and gynaecological facilities in New Zealand in 1965. The advice and help given by the Committee is greatly appreciated.

St. Helens Hospital, Christchurch—This last year has seen the first of the St. Helens Hospitals, that in Christchurch, handed over to a hospital board. These hospitals came into being in the main centres after the passing of the 1904 Midwives Registration Act, and their object was to provide a place "where the wives of working men can obtain, at a fixed charge, care and attendance during child birth". Before this time there had been "no hospital in New Zealand devoted to maternity work where nurses could be trained". It is thanks in no small measure to the wonderful work done through the years at these State maternity hospitals that New Zealand has such a good record of nursing care for mothers.

Illegitimate Births—Together with the Child Welfare Division of the Education Department, the Health Department has been reviewing trends in the illegitimacy rate. There has been a steady increase in the numbers of such births over the period 1954 to 1961 which is largely attributable to the greater number of births to mothers under the age of 21 years. (A change in registration took place in 1962 which resulted in the Maori figures being aggregated with the European, thus making comparison difficult after 1961.) The problem is causing concern because the long waiting lists of people wishing to adopt babies have markedly decreased. The actual number of adoptions taking place has not fallen and in fact has risen, but there are now more women in the age group producing illegitimate babies than in the older group who normally would wish to adopt.

How does this affect the Health Department? While it is clear that the illegitimate pregnancy, birth, and child carry a higher risk, the effect on a mother of a situation where it may become difficult to get a baby adopted must be considered, and abortion is obviously one solution that might be resorted to if a home is not going to be available for an unwanted baby. It is therefore essential that the State should be in a position to help when homes for such babies are needed. Reports have been received that hospitals are retaining babies because of the difficulty of finding adoptive parents or foster homes, but a hospital is no place for a baby when it is fit and well. In an attempt to estimate this problem a census will be taken in the very early part of 1965.

Since the higher number of illegitimate births occurs among what might be called "teenage mothers", the question must be raised of what can be done to prevent this increase. It is obvious from the demands that come from parents and from schools that more knowledge of what is better called "Education for Family Life" rather than "Sex Education" is required, and this demand our medical officers and nurses are attempting to meet.

Congenital Defects—The number of babies discovered at birth with congenital defects, as well as the type of defect, is now being notified to the Department. This will enable a close watch to be kept for any significant increase. This scheme unfortunately does not include all congenital defects but is a definite improvement on the existing situation.

Child Health

By the end of 1964 only one district was without a medical officer, though there were several areas still understaffed. The Department employed 51 medical officers on child health work of whom 25 were on a full-time basis. Part-time staff was the equivalent of 15 full-time, giving a total effect of 40 full-time officers.

Pre-school Children

As was envisaged by the change in policy, there was an overall decrease in the total numbers of examinations. It is gratifying, however, to report that there was again an increase in the number of Maori children examined.

School Children

Although the total number of school children examined by medical officers has decreased, the time spent on individual examinations has increased greatly as the new policy aims at providing examination of those children who are in need of it.

The time spent on health education has increased, and medical officers in almost all areas are helping in schools in education for family life. Their reports show that different areas are tackling this in different ways, but all methods used demonstrate clearly the magnitude of the task. For many years the Department has been involved in this work, but limits have been imposed by the shortage of time and staff and also to a certain extent by the demand. For the past four years the Health and Education Departments have been discussing a health education curriculum for schools which will include family life education. This has become more urgent recently because of the increase in publicity given to adolescents' behaviour, especially their sexual behaviour. Unfortunately the whole situation has become confused by well meaning but somewhat emotional efforts in this particular field. It is important to recognise that education for family life starts in early childhood and is the prerogative of parents. If they cannot or do not wish to accept the responsibility, it then devolves on the school and its resources. The medical officers and public health nurses are a skilled and accepted part of these resources.

Audiometry

Eight new audiometrists have been appointed this year, and a much better coverage has been given in the schools. It is hoped that in 1965 vision and hearing testing will be undertaken jointly, thus releasing medical and nursing staff for more urgent and more highly skilled work. In three areas courses for vision testing have already been held, but future training of new staff will take place along with the training for hearing testing at the Audiology Unit in Auckland.

Maori Children

In general these still require much supervision. The Board of Health report on the trial scheme introduced in the Waikato for the treatment of otitis media is being published, and a scheme is planned whereby all Maori children affected will be treated.

Iron Deficiency Anaemia

At the end of the year the treatment of all Maori babies for iron deficiency anaemia was introduced.

(d) Occupational Health

The Occupational Health Unit was opened on 20 October 1964, and the Department is now able to provide a comprehensive laboratory service in the specialised field of occupational hygiene. Facilities exist for the estimation of chemical hazards through air sampling and biological monitoring, and of noise hazards through noise analysis.

The closest cooperation has been maintained with the Department of Labour throughout the establishment of this new service, and procedures have been devised which enable officers of that Department to be able to call on the service with a minimum of delay.

A further major step forward was taken in the latter part of the year when, with the approval and encouragement of the State Services Commission, the New Zealand Railways, and the Post Office, a hearing conservation programme was introduced in all Government workshops.

This programme is designed to prevent the effect on hearing of prolonged exposure to loud noise. The first phase of ascertaining noise hazard areas was well advanced by the end of the year, while the second phase was just beginning. This involves the annual testing of the hearing of men working in noisy areas and the provision of ear plugs or muffs when this is considered necessary.

This is the first time that a particular occupational health programme has been applied uniformly to all Government employees.

Notification of Occupational Diseases

Five hundred and fifty-seven cases of occupational disease were notified during 1964, a reduction of 26 on figures for 1963. This reduction is due to a fall of 44 in the numbers of official notifications which numbered 425 in 1964.

Official notifications are those received from medical practitioners under section 74 of the Health Act 1956. The remaining notifications are those noted by the health district after information has been received from the Department of Labour, employers, or unions of the occurrence of a case. In one health district, Palmerston North, no notifications were received from medical practitioners.

The classification of the notifications is shown in table 11 of the appendix. It is apparent that the distribution of occupational diseases bears little relationship to the distribution of industry in the country and that notification of some conditions occurs more readily in some districts than others. It is also clear that many medical practitioners are not notifying occupational cases and that the number of notifications is an unreliable indication of the extent of occupational disease in this country.

The pattern of notifications was the same as in former years. The majority of cases were of contact dermatitis (337 cases) of which oils, greases, solvents, and cement accounted for 95 cases. The classifications of cases due to chemicals and other causes were chemical in causation: these accounted for 206 cases. The wide variety of chemicals concerned indicates the care needed in the handling of any chemical substance, particularly if it is new or unfamiliar. Dermatitis is an important industrial disease, not because it can maim or kill, but because of the loss of time and skill that it causes, apart from the discomfort and distress of the worker. It is clear that great care needs to be taken in the handling of adhesives and resins as well as other substances such as turpentine and kerosene and cement which have been known for many years to be strong sensitising agents of the skin.

The next largest group of occupational diseases were the infectious diseases of leptospirosis (135 cases) and brucellosis (4 cases). These are confined to the farming community and occur chiefly in the dairy industry. Occupational cases outnumbered non-occupational cases by more than 10 to one. Twelve more occupational cases of leptospirosis occurred in 1964 than in 1963, and this continues the slow upward trend in notifications that has been apparent in recent years. It is still not clear whether this is due to a real increase or to more ready diagnosis but the position is being closely watched. It is hoped that a pilot trial with leptospiral vaccine will provide evidence whether the vaccine will provide protection against the strains of leptospira causing the disease in New Zealand.

A small increase in diseases of the respiratory system (9 cases) was due to the increased usage of toluene di-isocyanate in the manufacture of plastic foam and insulation. These were cases of asthma due to the highly sensitising vapour given off during the process. Attention is now being paid to the ventilation of this process but it has been clearly demonstrated that, after sensitisation, exposure to very small quantities of the vapour, below that accepted for normal eight-hour exposures, can result in a recurrence of the condition.

Control of Health Hazards

The surveillance of the health of workers engaged in lead and electroplating processes has continued, and the results are given in table 12 of the appendix. Details in respect of electroplating processes are this year shown in more extended form, and other minor changes have been made in this table.

Although the number of lead process works appears large, a proportion of these are newspaper printing works and other works of low hazard. Examinations are carried out in these works at less frequent intervals than the monthly examinations on those exposed to high hazard. In all lead process works, seven men were suspended from work during the year when it was found that their blood counts indicated substantial absorption of lead. Two of these men were subsequently notified as suffering from lead poisoning. A full survey of the factory in which these cases occurred was carried out, and a number of unsatisfactory features in the control of dust and fumes were discovered. In general, it can be said that the lead hazard in New Zealand is well controlled, but constant vigilance must continue to be exercised both by the Department and managements of lead process works.

The position in electroplating processes was less satisfactory. Of the 326 workers engaged in chromeplating, 15 suffered from chrome ulcers on the hands, and a survey showed that 30 had chrome ulcers of the nose. While probably some of the latter workers have been affected for some years, it is apparent that about 15 per cent of the workers exposed in 1964 showed either immediate or remote effects of contact with chrome liquid or mist. Of the 416 workers engaged in chrome and other electroplating, nine others suffered other occupational conditions associated with plating processes. This result is disappointing in view of the monthly examinations of skin and nose that have been carried out since 1950 and emphasises that examinations are no substitute for care at all times. Many electroplating works are small, and pressure of work in recent years has been such that little time or care has been taken over housekeeping or working techniques.

Medical, Nursing, and First-aid Services

(a) *Medical and Nursing Services in Private Industrial Undertakings and Government Factories*

Table 15 of the appendix shows the medical and nursing services provided for employees in private industrial undertakings (almost entirely factories) and Government factories. This table is published for the first time.

Interest in the provision of medical services has grown since the initiation on 1 April 1964 of a scheme whereby the contract of an industrial medical officer can be subsidised up to 60 per cent provided that the contract is approved by the medical officer of health. This approval is confined to contracts which provide that the doctor shall, in addition to dealing with the initial treatment of casualties in the undertaking, carry out pre-employment examinations, examinations of men returning from sick leave and subject to special risk, and other preventive medical functions as laid down in the duties of industrial medical officers by the New Zealand branch of the British Medical Association.

The table shows that there are now 34 doctors providing medical service to 40 industrial units of whom 27, serving 30 units, are on approved contract. The approximate number of workers covered by the industrial medical officers on approved contract is 19,994, while the other doctors cover 3,909 workers, giving a total medical coverage of 23,903 workers.

Seventy-one nurses are employed in industry, 67 of them full time. These nursing services cover 50,300 workers.

The table also shows the number of factories registered in 1964 subdivided according to the number of employees and the distribution of the medical and nursing services among those groups. It is not surprising that these services are provided chiefly in the larger units. Of the 20,189 factories with up to 200 employees, six have some medical coverage and five employ nurses. Of the 100 factories with between 201 and 500 employees, 33 have nursing and 17 medical service.

Managements of larger factories that have no service should now consider whether they should provide the services that the majority of their group have found to be an advantage. The difference between the numbers of doctors and nurses employed also needs attention on the part of those providing only nursing services. The value of a nurse is greatly enhanced if she is working with a doctor, and there are very real advantages to be gained from the institution of pre-employment medical examinations both to management and to workers.

(b) *Industrial Health Centres*

While no definite figures are available, it is calculated that these clinics cover at least 28,000 workers, chiefly on the waterfront and in smaller factories. Details of treatments given in 1964 are given in table 13 of the appendix. No further clinics were opened during the year although planning for a new clinic at New Lynn, Auckland, reached an advanced stage. It is also hoped to provide a temporary clinic at Onehunga to assess the need for a permanent clinic if a suitable site can be found. The accommodation of the Queens Wharf clinic, Auckland, was enlarged and altered during the year, and much better facilities are now provided.

(c) *First Aid*

Although about a quarter of all factory workers are now covered by nursing services provided either by private industry or by industrial health centres, facilities for first aid in the remaining factories and workplaces are far from satisfactory. A survey indicating this was completed in 1964.* It is apparent that occupiers of factories not employing nurses must give greater attention to the provision and siting of first-aid

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*Special Report No. 19, *Survey of Factory First Aid 1963–64*.

facilities, and a substantial increase in the number of properly trained first aiders is necessary if good first-aid standards are to be achieved.

(d) *Medical Examinations of Young Workers*

Details of these examinations are shown in table 14 of the appendix. Three rejections resulted from 3,235 examinations; two of these were for visual defects. The worth of these examinations cannot be assessed in terms of the number of rejections as a large number of other remediable defects are discovered and treated, as indicated in this report last year.

Most examinations are carried out by 213 examining factory doctors appointed under section 37 of the Factories Act 1946. Where an industrial medical officer is employed, he may be appointed to examine the young workers in his particular firm: 14 doctors were so appointed in 1964 in addition to 17 doctors appointed to examine young persons entering Government factories.

This is a specialised examination which involves a knowledge of the work which it is intended that the young worker shall carry out, and the selection of a number of medical practitioners to carry out these examinations is a practice widely followed in other countries conducting similar examinations.

(e) Hearing Conservation

The National Audiology Centre is now firmly established.

Engineering problems in the clinical and industrial fields have been surveyed and special attention paid to the prevention of occupational deafness, in collaboration with the Occupational Health Unit.

New equipment has been designed and built for testing the hearing of new-born babies. This is now being tested and it is hoped to inaugurate a pilot survey shortly.

A comprehensive scheme to improve the facilities for treating ear disease in rural children in Maori areas has been launched with the help of a special subcommittee of the Maori Health Committee. Gratifying results have been obtained to date thanks to the enthusiastic cooperation of the several organisations and personnel taking part in the scheme.

Repairs, maintenance, and calibration of audiometers and sound level meters are now being done routinely at the Centre.

Information and advice on problems concerned with deafness or noise are being supplied on an increasing scale to organisations and individuals within and without the Public Service.

The training of audiometrists and nurses in the techniques of hearing tests has been facilitated considerably by the development of the Centre.

(f) Public Health Nursing

Considerable population changes are taking place in many areas. Families from rural areas are moving into towns and cities, and a steady migration to New Zealand from the islands and from further afield is taking place all the time. New housing areas are developing, and old established residential areas are suddenly transformed into tenement housing areas with more than one family living in a house. An increase in the number of working mothers is evident and in many instances this increases the difficulties met with in handling the multitude of problems related not only to health but to the care and management of the home and family. This has called for new and increased demands on the service, more particularly in the field of social work. A close liaison with other social agencies has been maintained.

A pilot scheme whereby patients discharged from one psychiatric hospital would be given supervision and supportive care by public health nurses was initiated during the year. The scheme was initially designed to help the young female patients but has subsequently been extended to all patients who need this service. Public health nurses, with their knowledge of home and family, can make a valuable contribution to the care and rehabilitation of the mentally ill and the opportunity to participate is welcomed by them.

Rapid industrial growth is taking place in many areas, and the nursing needs in relation to occupational health are being closely watched. Thirteen public health nurses attended seminars for occupational health nurses together with nurses drawn from private industry.

3. FOOD, DRUGS, AND POISONS ADMINISTRATION

Milk

Departmental sampling of over 5,000 specimens of milk is reviewed in table 9 of the appendix.

Although the percentage of non-complying samples may appear high, it is pointed out that the sampling is not representative of the total quantity of milk sold – departmental sampling is directed to secure enforcement of standards and the improvement of unsatisfactory supplies, and includes a substantial proportion of samples taken from sources which may be receiving special attention. The quality of milk sold in New Zealand is generally high, but once again the table reflects the outstanding non-compliance of Christchurch milk in solids-not-fat, which occurs mainly in the winter months.

Antibiotics in Milk

Results of sampling during 1964 for the detection of traces of antibiotics in milk have again shown that the general reduction in non-complying samples is continuing in a satisfactory manner.

Figures based on sampling carried out at milk treatment stations – as reported by the New Zealand Milk Board for the 12 months' period ended 31 August 1964 – show that out of 80,091 samples tested, only 339 (0·42 per cent) were unsatisfactory because of the presence of antibiotics, compared with 88,168 samples tested, 494 samples unsatisfactory (0·56 per cent), in the previous 12 months.

Pasteurised Dairy Products

The significant non-compliance in cream, ice cream, and milk shakes shown in table 10 arises for the most part from the application to pasteurised dairy products of the stipulation that no coliform organism shall be present in 0·1 ml of sample. The interpretation of the result of this test, i.e., its meaning in practical terms, is open to some questioning, but generally the presence of coliform organisms is a reflection of plant hygiene, i.e., the techniques employed in processing.

Meat Products

There were 59 prosecutions of retail butchers in 1964 for exceeding the limits for preservatives in meat products set by the Food and Drug Regulations 1946. This shows a substantial increase over last year's already high figure. In this age of good refrigeration and cool storage it is difficult to understand why butchers persist in adding an excess of chemical when more attention to good processing and storage would achieve a similar result.

In some cases, the manner in which preservatives are added to mincemeat and sausages suggests that butchers may consider the substances to be essential ingredients of the recipe and include them regardless of need or desirability, because over a long period of time it has been customary to do so.

It is possible that when butchers more generally realise that the manufacture of meat products should be limited to a quantity that with proper cold storage will remain acceptable, the apparent need for chemical preservation will no longer be felt.

Food Complaints and Seizures

During the year the Department investigated 870 complaints of unsound or unfit food, and 39 prosecutions arose out of these cases.

Examples of complaints were a piece of rubber in butter, a ball bearing in jam, cement plaster in an Easter egg, a first-aid dressing in cake, a sacking needle in flour, a staple in a Christmas pudding, small stones in a pie, a worm in milk, dead mice in a packet of sweets and a packet of peanuts, pieces of metal in loaves, as well as the dismal discoveries of mould, insects, rodent droppings, and cigarette butts.

There were 85 occasions when departmental officers found it necessary to seize and destroy food unfit for human consumption, and health inspectors from eight local authorities seized unsound food, mostly fish, on 23 occasions.

Publicity for Food Offences

Sometimes in medieval villages the butcher, baker, or brewer whose goods fell short of expectations or who gave short measure had the prospect of a period in the stocks or some other ignominy. In these enlightened days publicity for conviction and fine in the Courts is the counterpart. Publicity is likely to be a greater deterrent for the trader than the fines commonly imposed. It is therefore a matter of some concern that, in at least one city, more often than not, food prosecutions are failing to be reported in the daily newspapers.

Drugs

The full impact of the provisions introduced in 1962 into the Food and Drugs Act 1947 for the notification of "new drugs" and "changed drugs" is now felt by the drug firms and in the Department. During 1964 there were 251 detailed notifications, mainly under either section 11B or section 11C.

Some labelling of drugs is insufficiently readable or prominent because undue space is given to trademarks and designs which, quite apart from the name and address statement, give a quick visual identification of the manufacturer or render the label attractive. A pragmatic rather than an artistic approach seems more apt to the labelling of drugs. That the label of a free-selling drug should have a point-of-sale impact, from its design, is very questionable, and ideally the choice between rival brands of the same controlled drug should not depend on the attractiveness of the labels.

A noteworthy prosecution under the food and drugs, and poisons legislation involved newspaper and television advertisements in which incorrect statements were made about aspirin. Claims that drugs can be taken with impunity have, almost without exception, long been treated as misleading and hence contrary to the Food and Drugs Act. Since virtually all drugs come within the broad meaning of "toxic substance" in the Poisons Act 1960, specific restraints on advertising claims that drugs are "safe", "non-habit-forming", etc., are being pointed out and enforced.

Poisons

In 1964 more persons were detected in illegal possession or distribution of the "prescription only" classes of drugs, i.e., those which under the poisons legislation should reach the public only through authorised channels and then only on prescription of authorised persons. Whenever appropriate the Department assists, or calls in the assistance of the Police, in dealing with the illegal possession of these poisons. With Customs Department a watch is maintained over importations. When a private importation is intercepted in circumstances where there could not be lawful possession it may be seized. To avoid such loss, and perhaps criminal liability for wrongful possession, the public should not privately bring in drugs or treatments from mail order suppliers overseas.

Nutrition

During the past year three dietary surveys have been completed. These were made as part of the general nutrition surveys being carried out by the Wellington Hospital Medical Unit survey team. Surveys were made of two groups of Cook Islanders and a New Zealand European group. In the Cook Islands 470 adults in Avarua, the town area of Rarotonga, and the entire adult population of Pukapuka, a low coral atoll in the Northern Cook Islands, were studied. In New Zealand the survey group was some 430 adults living in the borough of Carterton, a small town some 50 miles from Wellington.

Information on food and nutrition has been provided to the public and to Government Departments and other organisations, and the quarterly *Nutrition Newsletter* is increasingly in demand. With the increasing exploitation of "nutritional" angles in food advertising, there is a need to put commercial claims in proper perspective and even to expose false emphasis. To some extent the vitamin cult is now supplanted by various "low calorie" and "special diet" themes, for which elaborate claims are made; there are even suggestions that some foods have intrinsic merit in promoting weight reduction, irrespective of the total calories in the diet.

The appointment of a public health dietitian in the Auckland district has enabled the advisory service to be extended in the upper half of the North Island.

4. DENTAL HEALTH

Dental health services continue to be provided directly or indirectly by the Department to children between the ages of two and a half to 16 years and to the patients of hospitals administered by the Division of Mental Health.

School dental nurses have provided in the year systematic treatment for pre-school and primary school children. A further 179,109 children have received regular treatment until 16 years of age from private dentists under the Social Security (Dental Benefits) Scheme and from a limited number of salaried dental officers.

Staff

On 31 March 1965 the professional and technical staff of the Division, excluding those seconded to other services and foreign students studying in this country, numbered 1,640, comprising 51 dental officers, four matrons, 48 dental nurse inspectors and tutor sisters, 1,045 school dental nurses (87 part time), 487 student dental nurses, and five dental attendants.

The number of school dental nurses engaged in field work has increased from 978 to 1,045.

Adolescent Dental Service

This service is available to children in the age groups 13½ to 16 years of age and is provided by:

(a) Full time salaried dental officers of the Department; and

(b) Private dental practitioners operating under a Social Security (Dental Benefits) Fee-for-service Scheme.

(a) *Treatment by Salaried Dental Officers*

The following are the statistics for the year under review for clinics in the Division of Dental Health controlled by dental officers (the figures for the previous year in parentheses):

Number of dental officers	5	(7)
Number of dental attendants	4	(6)
Number of treatment centres (including sub-bases)	12	(13)
Number of schools under treatment	14	(14)
Number of children under regular treatment	3,897	(3,210)
Operative dental treatment—		
Total number of fillings	9,134	(13,810)
Total number of teeth extracted	932	(1,611)
Total number of operations	15,161	(21,927)

Full-time salaried officers of the Division comprise most of the staff of the Mental Hospital Dental Service. A dental officer is seconded to the Cook Islands. The number of bursar graduates available for appointment to departmental dental clinics is now very small. During the course of the year one more adolescent clinic was closed.

(b) *Treatment by Private Dental Practitioners*

Statistics relating to treatment rendered as social security dental benefits for the year under review are as follows (figures for the previous year in parentheses):

Number of children who enrolled for general dental benefits as at 31 March 1965	179,109	(185,847)
Number of children who ceased to be enrolled for general dental benefits on attaining 16 years of age	40,507	(38,269)
Total amount paid private dental practitioners for treatment rendered under general dental benefits	£1,181,297	(£1,167,677)
Number of completed treatments in respect of which the above sum was paid	295,931	(295,612)
Average cost per completed treatment for general dental benefits	£3 19s. 10d.	(£3 19s.)

School Dental Service

As shown by the statistics relating to the work of the School Dental Nurse Service, in the year under review there has been an increase in the number of treatment centres and in the number of patients enrolled at school dental clinics. The number of school dental nurses has shown an appreciable increase. This was forecast in last year's report and is the result of the expanded training programme commenced at the Christchurch School for Dental Nurses in March 1963.

	1965	1964
Number of school dental nurses	1,045	(984)
Number of treatment centres (including sub-bases) ..	1,116	(1,075)
Number of schools	2,502	(2,505)
Number of children	456,049	(431,941)
Operative dental treatment—		
Total number of fillings	2,324,017	(2,298,449)
Number of carious permanent teeth extracted ..	617	(707)
Number of carious deciduous teeth extracted	74,209	(78,010)
Total number of carious teeth extracted	74,826	(78,717)
Total number of operations..	3,603,988	(3,517,097)

The total number of fillings amounting to 2,324,017 is to be contrasted with 74,826 teeth removed as unsavable. This latter figure, together with 6,204 extracted for School Dental Service patients by contracting dentists under dental benefits represents a ratio of 3·4 teeth to every 100 fillings.

The fall in the ratio of extractions to fillings is clearly shown in the following table.

Year	Fillings	Extractions	Ratio of Extractions per 100 Fillings
1925	59,322	43,181	72·6
1935	399,560	70,207	17·5
1945	1,017,290	76,335	7·5
1955	1,440,245	83,247	5·8
1965	2,324,017	81,030	3·4

Treatment for Pre-school Children

The number of pre-school children presenting for treatment continues to follow an upward trend. The number receiving treatment in the School Dental Service over the past 16 years is shown in the table below.

Year	Number of Pre-school Children Treated	Approximate Percentage of Total Pre-school Population 2½ to 5 Years of Age
1950	22,514	19
1955	44,976	35
1960	63,012	44
1965	82,690	53

Schools for Dental Nurses

The number of student dental nurses in training as at 31 March 1965 (including overseas students) was 498 compared with 463 twelve months ago. During the year 198 New Zealand students graduated, and 273 (including four overseas) new trainees were appointed. This high intake has been made possible by the expansion of the training programme at the Christchurch School already referred to and by making temporary arrangements at the Auckland School pending the provision of additional accommodation and facilities during the course of the current year.

Dental Health Education

Teaching the principles of dental health continues to be a major activity. Chairside instruction is given as a routine to all children, and many displays and exhibits with a dental health motive were prepared and presented by school dental nurses. In all 13,179 lectures and addresses to parents and children were given, and 275 health exhibitions and health stalls at school and public functions were arranged.

During the course of the year a handbook on dental health education was produced for the use of school teachers who can provide valuable assistance to the division's dental health education programme, especially in country schools which have no dental nurses of their own.

International Interest and External Aid

Interest from overseas in the New Zealand dental care programme continues to grow. During the year visits were received from the Chief of the Dental Health Unit of the World Health Organisation, Geneva, the Secretary-General of the International Dental Federation, London, and from other distinguished members of the dental profession of the United Kingdom. Also received were the Director-General of Health for the Commonwealth of Australia and officials of the Departments of Health for Tasmania and South Australia. In addition a large number of overseas inquiries have been dealt with.

Eighteen overseas persons have been attached for training – nine from Ghana sponsored by SCAAP, and five from Sabah and four from Sarawak under Colombo Plan. During the current year a dental officer on the teaching staff of the Maharagama School for Dental Nurses, Colombo, Ceylon, is expected to visit this country for a six months' course of study.

At the request of the World Health Organisation and with the approval of the Government, the Director of the Division of Dental Health acted during the course of the year as Consultant to the Expert Committee on Dental Health of the World Health Organisation, which met at Geneva to discuss the organisation of public dental health services. The following countries were represented: United Kingdom, United States, the U.S.S.R., Czechoslovakia, Sweden, Brazil, Malaysia, and Switzerland.

5. MEDICAL STATISTICS

Statistical Assistance

The principal function of the Branch is to publish and supply information concerning the health of the country. The following is an analysis under broad headings of the inquiries for figures of one description or another for the two years 1963 and 1964. Many of these requests necessitate machine processing of material and also involve days of clerical time. These totals exclude the routine supply of data to divisions of the Department, and to WHO, the United Nations, and other internationally recognised statistical collection centres. Altogether there were 258 separate inquiries by letter or telephone in 1964, as against 195 in 1963.

Subject-matter of Requests	No. of Topics 1964	No. of Topics 1963
Hospitals—		
General	117	82
Mental	15	20
Deaths	80	80
Cancer cases registered	25	14
Survey material	16	10
Foetal deaths	6	10
Births	5	6
Miscellaneous	38	22
Total topics	302	244

In addition, consultant service and machine assistance was provided for a number of specialists working on disease studies.

Training of Hospital Medical Records Officers

Medical records in hospitals are a fruitful source of statistical and epidemiological material. It is in the Department's interests to encourage a high standard of record keeping. A long-term plan is to develop a corps of medical records officers who will be of value to hospital administrators by producing statistical reports for them, covering the use which is made of their hospital departments and hospital facilities. A textbook on every aspect of medical record keeping has been assembled from contributions made by senior medical records officers of the Branch. This textbook is planned to become the basis of a diploma examination which will probably be conducted by the Royal Society of Health.

Perinatal Certificate

In collaboration with Professor D. G. Bonham of the Post-graduate School Obstetrics and Gynaecology, University of Auckland, and with the approval of the Maternity Services Committee, a perinatal certificate which will replace the present still-birth certificates for the certification of causes of foetal death and the death certificate for the certification of causes of deaths of babies within the first seven days of life has been designed and will be introduced at an early date. The introduction of this certificate, to which will be applied an integrated classification of the causes of still birth and death soon after birth, will provide a clearer insight into the epidemiological aspects of pregnancy wastage.

Cancer Case Registration

Cancer is a major health problem which is growing from year to year. There is a need for knowledge of cases as they occur in the community so that, among other things, changes in incidence can be measured and the effectiveness of control and detection measures can be assessed. Because of its small population and the close integration of its health services, a definite contribution can be made at very little cost by this country to the world's knowledge of the epidemiology of cancer, provided that all or nearly all cancer diagnosed is reported to a central agency. At present all public, but not all private, hospitals forward case summaries for analysis, and, with the purpose of having this gap closed, the New Zealand Cancer Society approached the Department, which then sought the views of the two associations that would be concerned in this matter. Discussions are now going on with a view to drafting legislation which will enable these objectives to be achieved.

The New Zealand Cancer Registry has been invited to be a contributor, along with 23 other selected registries throughout the world, to a central collecting agency under the control of the eminent English research statistician, Professor Richard Doll. This agency has been set up in London by the International Union Against Cancer, and the material will be used for epidemiological research studies.

Statistical Survey

For the third successive year births declined in both number and rate. The drop in 1964 was more abrupt than in the two previous years, the total of 62,459 births registered being 2,216 or 3·4 per cent down on the 1963 total. The drop in 1964 was in both races, although more pronounced in the European. This increasing decline in the birth rate can in the main be attributed to the increasing use of the pill method of contraception. Other countries including Australia and Canada are experiencing a similar falling trend, and all the evidence points to a permanent toning down of the sustained high level of fertility which has prevailed in New Zealand since the end of the war 19 years ago.

The absolute numbers and the crude birth rates were as follows in the racial groups over the last three years:

—	Number of Live Births			Rate per 1,000 of Population		
	Both Races	Europeans	Maoris	Both Races	Europeans	Maoris
1962 ..	65,127	57,463	7,664	26·2	24·8	43·8
1963 ..	64,675	56,548	8,127	25·4	23·9	44·8
1964 ..	62,459	54,504	7,955	24·0	22·6	42·3

Infant, neonatal, post-neonatal, and still-birth numbers and rates are set out in table 3 in the appendix on p. 88.

After seven years of decline there was a halt to the downward trend in the still-birth rate in 1964. The total of still births was 814 (824 in 1963), producing a rate of 12·9 per 1,000 total births (12·6 in 1963).

The total of infant deaths was 1,193, or 76 down on the 1963 figure, giving a rate of 19·1 (19·6 in 1963), which is a new low record. Especially commendable is the drop in the Maori infant death rate to 30·0 in 1964 (32·6 in 1963). As short a time as five years ago, the Maori infant death rate was 54·4 per 1,000 live-born. By far the greater part of this saving of lives of Maori babies has been in those surviving the first month, reflecting no doubt improved post-natal care and better home environment.

The movement in the all-ages death toll over the last three years was as follows:

—	Number of Deaths			Rate per 1,000 of Population		
	Both Races	Europeans	Maoris	Both Races	Europeans	Maoris
1962 ..	22,081	20,857	1,224	8·87	9·01	7·00
1963 ..	22,416	21,218	1,198	8·81	8·98	6·60
1964 ..	22,861	21,693	1,168	8·80	9·00	6·21

The absolute numbers of deaths in New Zealand rises steadily each year. Concurrent with the increase in the European total there has been, over recent years, a slight fall in the Maori total. This reflects the adverse effect of the ageing of the European population and the raising of Maori health standards. The Maori has a very young population, mainly because of the long history of very high birth rates combined with high death rates in childhood. The effect is to produce a low crude death rate which, when adjusted to the structure of the European population so that a valid comparison is possible, just about doubles. Nevertheless, the drop over the three years in the Maori rate of dying is a real one and is a measure of the general overall improvement in Maori health.

Causes of Death

The absolute numbers and the crude rates per 100,000 of population over the last five years in selected causes are set down in table 4 of the appendix. The causes have been combined into those causes mainly responsible for death in New Zealand, while others of lesser numerical importance, like tuberculosis, have been included because special interest attaches to them. All the 1964 figures are provisional and subject to slight alteration. The final detailed cause of death tables by race, age, and sex are published in the *Annual Report on Medical Statistics—Part I: Mortality.*

The excellent record in tuberculosis control was maintained in 1964, new low figures being again established. The epidemic diseases which were once common, typhoid fever, scarlet fever, diptheria, whooping cough, and chicken pox, seldom cause death today, but the occasional death which does occur is too often that of a Maori child. The highest totals in the infectious group were infective hepatitis, 16 deaths; meningococcal meningitis, 10 deaths; acute infectious encephalitis, five deaths; and measles, four deaths. There is special interest in hydatid disease, four deaths, and tetanus, three deaths.

One death in six in New Zealand is due to cancer of one type or another. The small decline of 98 deaths over 1963 in the 1964 total of 3,657 cancer deaths is no more than a fluctuation from the steep rise in 1963. Lung cancer again exacted a heavier toll with 555 deaths in 1964 (542 in 1963), and unless there is a change in smoking habits the increase is likely to continue. Over one death in three is due to some form of heart disease, the total of 7,982 deaths being a rise of close to 200 on 1963. Coronary forms of heart disease seem to be increasing in incidence, the greater prevalence of cases not simply being due to the ageing of our population. In 1964, 5,772 deaths were due to this single cause alone (3,668 were men and 2,104 women) as against 5,548 in 1963. Known predisposing factors, such as cigarette smoking, lack of physical exercise, excess weight, and high blood pressure, are all able to be controlled by the individual. Bronchitis is another disease linked to cigarette smoking in which the death rate continues to climb. Pneumonia deaths continue to increase, the rates once again approaching the levels which pertained prior to the introduction of chemotherapy, although most of the increase is as a terminal cause in old age. Influenza was more prevalent in 1964, as is indicated by the figure of 150 deaths in comparison with the totals in other peak years of 191 in 1962 and 190 in 1959. Once again, it is the old people who suffer most in these minor flu epidemics, about three and four occurring at ages 65 and upward.

The year was a normal one for accidental deaths, the total involving motor vehicles being up by nine on the 1963 figure. The risk of death from motor vehicles should be considered in relation to the numbers of vehicles on the roads, rather than to the size of the population.

PART II—BUREAU OF MEDICAL SERVICES

1. HOSPITALS

Introduction

In previous annual reports reference has been made to the urgency of new hospital provision for areas of marked and rapid population increase. In terms of actual numbers unquestionably the problem is most acute in the Auckland, and, to a lesser extent, in the Waikato area of the Waikato Hospital Board, districts.

However, in terms of percentage population increase and particularly in relation to established hospital facilities, the problem may be said to be even more acute in the Bay of Plenty and Rotorua areas, served by the Whakatane, Tauranga, and Waikato Hospital Boards.

In general over the rest of the country, with a few obvious exceptions in the case of Wellington and North Canterbury Hospital districts, the work of the hospital boards continues in the direction of a steady accretion of beds and facilities to serve more steadily growing populations, the replacement of obsolete accommodation, and the upgrading of units which either fall below present acceptable standards or no longer fill the requirements of current hospital practice.

The total expenditure for this year upon hospital capital works again shows an increase over the previous year:

1964–65, £5·2 million.
1963–64, £4·82 million + £0·6 million capital grants.

It is perhaps as well, by way of comparison, to recall that the total expenditure on comparable works for 1951, the last year of full local rating support of hospitals, was £0·98 million.

Throughout the year the major efforts of many boards and of the Department have still, of necessity, been directed to the satisfaction of those needs for which a high priority can properly be assigned in terms of urgency. So far as the aspect of priority is concerned, it may well be said that this matter is one that has been fully integrated into the hospital works programme in the form in which it is considered annually by the Hospital Works Committee in its review of estimates of hospital capital development for the ensuing year.

Quite properly the attention of the Health Department and the Hospital Works Committee has been engaged upon a careful appraisal of the many suggestions that are put forward from various quarters from time to time as to the advantages that might be expected from such practices as greater use of standard plans and closer adhesion to principles elaborated in planning guides and bases. Nevertheless, upon a closer examination of these matters as they apply to individual hospital projects, it is found that there are certain persistent and recurring limitations to the practical application of standard plans to a given particular project. This is especially the case in redevelopment schemes on older hospital sites upon which there are sound buildings with a relatively long expectation of life. The problem often becomes, therefore, one of a compromise in terms of economics and feasibility.

Nevertheless, work is proceeding on the elaboration of new planning guides and bases, so that greater use can be made of such standardisations whenever practicable. In this respect the attention of several hospital boards has also been directed to the possibility of utilising plans that have been found suitable for comparable purposes elsewhere in the country. Even so, the restriction and not infrequently sloping nature of the sites of many of our older hospitals would impose considerable additional expenditure in planning of appropriate foundations for the adaption of existing or standardised plans to such difficult sites.

Another factor which not infrequently militates against the use of some standardisation of plans at the present time in many New Zealand hospital redevelopment schemes is the variable content of the new buildings required and the increasing complexity of the services aspect of complex acute hospital projects, as compared with the relatively simple and repetitive nature of buildings of, for example, a psychiatric or psychopaedic hospital, for which a relatively comprehensive series of standard plans has been evolved over the past 15 years or so.

The increasing complexity of the requirements of many departments of acute hospital and increasing dependency on complex laboratory and other supporting services, together with great changes in the ease of transportation over many parts of the country, are inevitably leading to a closer appraisal of the necessity, and indeed urgency, to review the role and use made of existing hospital facilities within certain defined geographical regions. This in turn has led to a very proper re-examination of proposals for the reduction of the number of hospital districts, a matter upon which every Commission of Inquiry into hospital affairs since 1909 has brought forward proposals.

The Hospitals Division notes with appreciation and understanding the observation of the Public Expenditure Committee "that in some instances at least a Board's existence seems to be related to the requirements of former days and may have become an anachronism today." With this observation in mind, and having regard to the report of the Public Expenditure Committee in 1963 "that the powers of the Hospitals Act 1957 be used to investigate and implement proposals for amalgamation of Boards where appropriate," the matter has been further considered by the Hospitals Advisory Council who have made specific recommendations on this matter concerning hospital boards on the West Coast and in Taranaki. Proposals concerning amalgamation in these two areas have been put to the boards concerned, for their further consideration. Experience of the Northland area where six small hospital boards came together to form a new Northland Hospital Board in 1950 clearly suggests that both the West Coast and Taranaki would benefit by full adoption of proposals currently before them.

Hospitals Advisory Council

The Council met twice during the year. It considered comments by hospital boards on that part of the 1963 report of the Public Expenditure Committee relating to hospital affairs.

Among the aspects to which close attention was given were the advantages of combined stores purchasing by hospital boards and the views of hospital boards generally on amalgamation proposals in areas where this is deemed appropriate and likely to be beneficial in the organisation of medical services within the area concerned. The Council submitted specific recommendations on proposals for hospital board amalgamations in the Taranaki and West Coast areas. It also discussed at some length matters relating to the greater use of standard plans for hospital building and noted with interest that work is proceeding on the revision of the Health Department's existing planning bases for the guidance of hospital boards.

Other matters which came to the notice of the Council included current economic circumstances of private hospitals, difficulties relating to specialist medical staffing on the West Coast and in the Gisborne - East Cape area, and the question of a third neurosurgical unit for New Zealand.

The Council also made recommendations to the Minister with regard to the closing of Otaki Sanatorium and two small maternity hospitals.

Institutional Beds, Patients, and Services

Public and Departmental Institutions

In the supplement to the annual report of hospital statistics as at 31 March 1964, 216 hospital board and departmental institutions were listed, consisting of 74 general hospitals, 92 maternity hospitals, 24 special hospitals, 22 old people's homes, and four Government institutions. The number of beds at 31 March 1964 of all descriptions, available for patients or inmates in all public institutional and private licensed hospitals, are shown in the following table.

Type of Bed	Public Institutions (Including Government)		Private Licensed Hospitals: Number of Available Beds	Total Number of Available Beds
	Number of Available Beds	Average Number of Occupied Beds per Day		
General	12,508	10,120·6	2,735	15,243
Per 1,000 of population ..	4·9	4·0	1·1	6·0
Maternity	2,683	1,700·9	342	3,025
Per 1,000 of population ..	1·1	0·6	0·1	1·2
Total hospital beds	15,191	11,821·5	3,077	18,268
Per 1,000 of population ..	6·0	4·6	1·2	7·2
Non-hospital beds ..	1,177	956·6	..	1,177

Persons Being Treated or Maintained in Public Hospitals

The number of persons who were treated or maintained in public institutions during the year ended 31 March 1964 was 282,443, including 1,963 persons maintained at some time during the year in non-hospital beds mainly in hospital board old people's homes. This total is equivalent to 9·0 per cent of the population of this country. The number of attendances by outpatients was 2,476,720 including 78,470 attendances for dental outpatients.

The statistics now obtained from hospital boards enable figures for general hospital beds and maternity beds to be separated as shown in the following table, and, while detailed comparison cannot be made in this way with previous years, the grand totals show comparison with the previous year and a decade previously.

Number of Patients

1964	Available	Average Beds Occupied per Day	Inpatients Treated	Turnover	Number of Births	Outpatients Attendances (Including Dental)
General hospital beds—						
In institutions classed as general hospitals ..	10,794	8,655	206,230	23·8		2,328,808
In other institutions ..	1,714	1,466	10,326	7·0		147,912
Maternity beds—						
In hospitals classed as general hospitals ..	1,374	866	31,829		28,298	
In separate maternity hospitals	1,309	835	32,095		27,228	
Grand totals—						
1964	15,191	11,822	280,480		55,526	2,476,720
1963	15,354	11,559	270,549		56,622	2,397,056
1953	14,371	11,199	203,657*		not available	1,514,622

*Also includes persons maintained in hospital board old people's homes

The 1,714 beds in "other institutions" referred to as having these general hospital beds comprised 559 beds in hospitals which are also old people's homes, 992 in special hospitals of several types, and 163 general beds in maternity hospitals.

In the section relating to maternity beds, all births are shown as relating to these beds, but some small proportion of births, for example, those occurring from Caesarean operations, will have taken place in the surgical section of general hospitals. It will again be noted the number of patients treated in maternity beds exceeds the number of births, owing to admissions for ante-natal treatments and the inclusion, in the statistical definition of "patient", of babies requiring special treatment after discharge of mother.

Special Departments and Special Services in Public Hospitals

Summarised totals (inpatient and outpatient combined) of the work done by special departments in all hospitals are as follows:

		Year Ended 31 March		
		1958	1963	1964
		(000)	(000)	(000)
X-ray diagnostic:	Number of examinations	614	702	767
X-ray therapy:	Number of treatments	72	95	100
Physiotherapy:	Number of treatments	953	1,389	1,433
Pathology:	Number of tests	1,088	2,286	2,673
		No.	No.	No.
	Number of post-mortems	4,010	4,260	4,734

Staff in Public Hospitals

The total of employees of all hospital boards at 31 March 1964 was 1,170 more than the previous year.

Institutional staffs, for example, excluding administration, district nursing, farm, and miscellaneous staff, employed at 31 March 1964 totalled 25,514 for the total of 16,100 beds in hospitals and old people's homes. Of these beds 12,567 were occupied daily, and the staff engaged averaged 2·0 per occupied bed.

Staff Employed

The number of staff employed in public hospitals and other institutions and activities controlled by hospital boards at 31 March 1964 and the actual payments of remuneration for the year ended on that date, with the corresponding figures in parentheses for the previous year, are as shown below:

	Number Employed at 31 March 1964	Salaries and Wages Payments for 1963–64 £(000) £(000)
Institutional medical (whole time and part time)	1,583* (1,516)	1,777 (1,640)
Other professional and technical	2,072 (1,854)	1,570 (1,389)
Nursing	12,012 (11,580)	7,961 (5,469)
Other treatment staff	418 (406)	379 (355)
Domestic and other institutional staff ..	9,429 (9,252)	6,783 (6,403)
Administrative staff	573 (544)	585 (544)
District Nursing..	268 (235)	237 (193)
Farm (including vegetable gardening) ..	22 (32)	21 (28)
Other non-institutional	575 (363)	193 (129)
Total	26,952 (25,782)	19,506 (16,150)

*The numbers are those of positions filled at all institutions and persons are duplicated where they provide clinical services at more than one institution.

Medical Staff

The following table shows the number of medical officers employed by hospital boards at 31 March 1965.

In the case of visiting medical officers the hours worked have been converted to show the number of whole-time employees that would be required to give an equivalent service.

—	Whole Time	Part Time	Whole Time Equivalent
Medical administrators	52	20	9
Physicians—			
General	23	116	45
Tuberculosis	15	8	3
Others	16	91	32
Surgeons—			
General	23	95	36
Others	24	161	60
Pathologists	30	9	4
Radiologists and radiotherapists.. ..	42	38	14
Anaesthetists	34	139	36
Other medical staff	13	40	12
Registrars	170		
House surgeons and senior house officers ..	211		
	653	717	251

Overseas Post-graduate Study Leave

Leave on pay and assistance with fares for overseas study in 1965 was granted to 10 whole-time and 13 part-time senior medical officers.

Overseas study grants were also made to 42 junior medical officers who had completed four years' continuous service in public hospitals.

Junior Medical Staffing

The approved establishment for 1965 was for 203 house surgeons and 25 supernumerary positions, the latter to be filled by appointments from outside the house surgeon pool or from overseas. At 31 March 1965 the numbers employed were 200 house surgeons and 23 supernumeraries.

The onerous task of arriving at an equitable allocation of a limited pool of house surgeons to established and supernumerary positions has been greatly eased by the thoughtful and impartial contributions of the Medical Superintendent representatives on the House Surgeons Allocation Committee. The care and concern of members of this Committee to find a balance between the just and supportable claims of hospitals serving larger urban and smaller rural communities is indeed worthy of wider recognition among those concerned with hospital services.

Hospital Works and Development

Hospital Works

The annual return by hospital boards of the various hospital buildings, of patient accommodation, and ancilliary services being undertaken, is detailed in table 19 of the appendix. These returns will be coordinated later by the Department and the Ministry of Works on a national basis in regard to the anticipated expenditure for this year. Last year's return by boards showed an estimated expenditure of £7·11 million which it was considered would reduce to £5·74 million. Final expenditure figures are not yet to hand, but indications are that the aggregate payments will not exceed this latter figure. The forecast of expenditure for 1963–64 was £5·48 million against which actual expenditure was £5·21 million.

Each hospital building project is carefully examined at all stages of design by the Hospital Works Committee which also has regard to availability of contracting firms and the capacity of the building industry locally at the stage of calling tenders. The overall programme is also co-related by Ministry of Works and Treasury with the national demand; indications at present show that the volume of commercial, Government, local body, and private building works being undertaken has heavily committed the building industry, almost to the point of saturation in the more densely populated areas.

In some parts of the country hospital boards, however, are faced with a need to replan their hospital services against explosive population increases. Many existing older hospital buildings are either structurally or economically unsuitable for alteration and modernisation to meet the needs of the growing and increasingly varied inpatient and outpatient demand arising from advances in medical technology. This involves a large replacement programme, of which a major instance is the demolition of the 1874 main block at Auckland Hospital, soon to be replaced by a new acute block, the largest single construction contract in New Zealand's building history to date.

The tabled programme of works is a large one and involves the continued forward planning of many projects that will be built over a period of many years. In this the Hospital Works Committee makes use of the Hospitals Division's Research and Planning Unit, especially in matters of assessment of hospital-bed needs based on present-day usage and population forecasts.

Details of projects that have been completed during the past 12 months appear in table 20 of the appendix.

Hospital Works Committee

The Hospital Works Committee, which is a statutory committee of three, representative of Treasury, Ministry of Works, and the Department of Health, held 20 meetings during the past financial year for the examination and recommendation to the Minister concerning a wide diversity of proposals relating to hospital building and related medical-care projects. Proposals which came before the Committee are summarised below:

(1) Hospital boards—	
Development schemes	8
Building projects (in excess of £10,000) ..	140
Land purchase and sales	2
Loans	17
(2) Private hospital loan applications .. - ..	5
(3) Old people's homes and pensioners' flats ..	27
(4) Mental health projects	22
(5) General items	27

In its examination of proposals brought before it, the Committee has given its mind closely to the important matters of the "establishment of need" as well as to the soundness and economics of the proposals submitted to meet the needs in question. Though the summary of projects considered makes reference to some 140 hospital building projects, some of the individual items have come under scrutiny and examination on more than one occasion as proposals are examined at various stages of progress, from approval in principle after need is established to approval of working drawings, authority to go to tender, etc.

During the year under review building programmes and specific projects for the Division of Mental Health have also come under the review of the Hospital Works Committee in the same manner as proposals for hospital boards and other projects outlined in the summary. In all some 22 Mental Health Division projects have been dealt with by the Committee during the year.

Architectural Services

The volume of work handled by this section has in no way reduced over the last year, current emphasis being on the provision of improved facilities for clinical services. The Middlemore acute block has been commissioned and tenders let for the Auckland acute block, both of which buildings contain large areas of clinical accommodation. In addition drawings are being prepared for Green Lane stage II, Waikato clinical services block, Westown, Napier, and Christchurch ward and clinical blocks, and the Wellington clinical building. Southland Hospital clinical services block is about to go to tender.

Two fire protection officers have been appointed, and comprehensive surveys have been carried out in various hospitals with worth-while results. The inspections made should be of direct and material assistance to hospital boards in keeping their institutions in a sound state of fire safety.

The Research and Planning Unit and the Chief Architect and his staff have been working on the revision of unit planning guides. Sections on obstetric wards and nurseries have so far been issued, and it is intended to continue this work and research and to issue information upon a wide range of units.

Finally it is the firm intention to give more attention to the evaluation of hospital buildings already in commission, thus allowing of a more comprehensive analysis of the relative advantages and disadvantages of current trends in design and materials. Hospital boards have accordingly been called upon to submit fuller appreciation and evaluation reports on all new buildings within a sensible period after commissioning, than they have been in the habit of submitting hitherto. The importance of two-way communication between hospital boards and Health Department and readiness to feed back information relating to newly commissioned projects cannot be too strongly stressed.

Research and Planning Unit (Formerly known as the Operational Research Unit)

The Research and Planning Unit has issued four further reports based upon data collected during the patient-nurse dependency survey conducted in three metropolitan general hospitals in Christchurch. The reports dealt with the general survey data, geriatrics, general surgery, and orthopaedic surgery. The survey data have already proved of value to several hospital boards in arriving at a determination of the number of beds needed for different specialities in the regional development planning.

The Research and Planning Unit has also been concerned, in collaboration with the Chief Architect, in work relating to the revision of planning guides dealing with the obstetric ward and the obstetric nursery. These guides, the first of a series intended for basic information and guidance of those concerned in hospital planning and design, have now been printed. The Unit will also be concerned with others to follow in the series.

The staff of the Unit has continued to contribute to seminars and educational courses. It has also given assistance to other divisions and to medical and nursing bodies in the collection and evaluation of clinical data. They greatly appreciate the cooperation received from hospital boards with projects they have been concerned.

St. Helens Hospitals

Auckland—A 63-bed hospital is under construction on a new site at Western Springs, adjoining Chamberlain Park. It is timed for completion in mid 1966. The new hospital is to replace the present old hospital in Pitt Street. The nurses' home is already completed and occupied by the staff of the present hospital.

Wellington—The new 60-bed hospital block, adjacent to the present hospital in Coromandel Street, is due for commissioning in April-May 1965.

Departmental policy is to transfer the St. Helens Hospitals to the relative hospital boards at the appropriate time, and negotiations are under way between the Department and the Board for the transfer of St. Helens, Wellington, to the control of the Wellington Hospital Board on 1 April 1966.

Christchurch—The Christchurch St. Helens Hospital was taken over by the North Canterbury Hospital Board on 1 April 1964.

Consents to Capital Expenditure

The actual annual rate of expenditure does not fluctuate substantially, and the fluctuation here merely reflects the point of time at which formal consents, as required by the Hospitals Act, are issued for boards to undertake future expenditure.

Buildings—During 1964–65 consents were granted to hospital boards to undertake building projects (with 1963–64 figures for comparison) as follows:

	1963–64 £(000)	1964–65 £(000)
Major works exceeding £20,000	2,649	6,642
Consents ranging from £10,000 to £20,000	345	278
Consents ranging from £5,000 to £10,000	271	278
Consents ranging from £500 to £5,000	315	329
	£3,580	£7,527

Hospital Equipment and Furnishings—In the same period approvals were issued to boards for expenditure of £966,018 for items of equipment and furnishings costing more than £500 (with 1963–64 figures for comparison) as follows:

	1963–64 £	1964–65 £
Motor vehicles: ambulances, trucks, cars	50,254	94,049
X-ray equipment	132,625	132,799
Furniture, nurses' homes, staff accommodation	60,467	82,737
Ward equipment	25,084	11,767
Surgical and specialist equipment	75,714	24,960
Laundry equipment	67,752	36,772
Hospital equipment	219,728	316,187
Boilers and generators	54,884	266,747
	£686,508	£966,018

Finance

Actual expenditure of hospital boards in 1963–64 for both capital and maintenance purposes (inclusive of expenditure from loans but exclusive of amounts paid between boards or to Government institutions) totalled over £40 million and is summarised thus:

	1962–63 £(000)	1963–64 £(000)
Maintenance	27,336	30,295
Capital	8,172	9,860
	£35,508	£40,155

Maintenance Expenditure

A summary of maintenance expenditure of hospital boards for 1963–64 (with the figures for 1962–63 for comparison) is given below.

—	1962–63		1963–64	
	Amount	Percentage of Total	Amount	Percentage of Total
	£(000)		£(000)	
Institutional maintenance	23,962	87·7	26,460	87·4
Outdoor relief	78	0·3	101	0·3
Grants to private hospitals, etc. . .	59	0·2	53	0·2
District nursing (including grants) . .	309	1·1	367	1·2
Transport of patients (including grants) . .	293	1·1	301	1·0
Administration	660	2·4	694	2·3
Interest on loans	1,426	5·1	1,678	5·5
Superannuation	206	0·8	224	0·7
Services provided for other boards or departmental institutions	26	0·1	39	0·1
Miscellaneous	317	1·2	378	1·3
Totals	27,336	100·0	30,295	100·0

Inpatient Expenditure

For the year 1963–64 the average daily expenditure for individual inpatients treated in hospitals classed as general hospitals was £5 13s. 3d. Outgoings totalled just over £54,000 each day for resident patients. On the average each patient cost £83 10s. 0d. as compared with £79 in the previous year.

Daily expenditure per inpatient in general hospitals was made up as follows:

	1962–63			1963–64		
Treatment expenditure—	£	s.	d.	£	s.	d.
Salaries and wages—						
Medical		6	5		6	9
Nursing	1	4	5	1	15	1*
Technical and other treatment staff		2	6		2	8
Total	1	13	4	2	4	6
Special departments (e.g.) X-ray laboratories . .		4	8		5	1
Supplies and expenses		7	7		8	0
Subtotal, treatment	2	5	7	2	17	7
Institutional administration		8	6		8	11
Heat, light, power, and water		8	3		8	9
Household (housekeeping, dietary, laundry) . .	1	18	4	1	12	7*
Buildings, grounds, and miscellaneous		5	3		5	5
Subtotal, non-treatment	3	0	4	2	15	8
Total daily expenditure	£5	5	11	£5	13	3

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*Prior to 1 April 1963 nursing staff were not charged for board and lodging, and those who lived out were paid an additional sum of £156 per year. From 1 April 1963 all nursing staff were paid on a live-out basis, and those who lived in were charged £156 per year for board and lodging. The change in policy increases the nursing salary costs but reduces the household expenses cost.

The total expenditure per patient was made up as follows:

	1962–63 £ s. d.	1963–64 £ s. d.
Treatment	34 0 0	42 8 0
Institutional administration	6 6 0	6 10 0
Heat, light, power, and water	6 2 0	6 8 0
Household	28 12 0	24 1 0
Buildings and grounds	3 18 0	4 0 0
Miscellaneous	2 0	3 0
	£79 0 0	£83 10 0

Inspection and Advisory Services

In the course of the year all hospital board districts have been visited, some on several occasions by the Director or Assistant Directors of the Hospitals Division. Among aspects of hospitals to which attention has been particularly directed during the year have been problems of the small maternity units, 64 of which were visited by the Director before September 1964.

The Hospitals Division welcomes the increasing frequency with which members of many boards and their officers have visited Wellington for the purpose of discussing matters relating to the development schemes, building proposals, and equipment. In the case of two major hospital redevelopment schemes delegations from a single board have attended on a number of occasions during the year, and the value of these discussions in the course of planning of major projects is apparent in the speed with which it has been possible to bring these schemes through the successive stages at which they can be taken to the Hospital Works Committee. The Division attaches considerable importance to early and continuing discussions in the course of development of all major projects. It also sees considerable advantage in a furtherance of this procedure in the case of some of the lesser projects which not infrequently have unsuspected complexities, especially where they incorporate existing buildings, as on some of the older hospital sites.

The Division would like to place on record its appreciation of the work of the advisory pathologists, who have, in the course of the year, visited hospital laboratories throughout the country. Their advice and reports have been most helpful both to the Department and to hospitals.

Other visitations have included nursing, physiotherapy, and occupational therapy services of hospital boards. Maternity hospitals have also been regularly visited by district nurse inspectors.

During the course of the year the advisory officers and advisory house managers have visited six hospital boards and eight departmental hospitals and their reports have covered many aspects of the administrative services and activities of the hospitals concerned.

Ambulance Services

Ambulance Transport Advisory Board

The Board met on two occasions during the year, and, in addition, the working committee of the Board met on a number of occasions.

Air Ambulance Service

A total of 36 licensed aircraft, operated by aero clubs and commercial operators, were available for ambulance purposes. Patients carried by air during the year ended 31 March 1964 were:

Service	No. of Patients
Scheduled air services..	1,006
Civil aircraft on charter	368
RNZAF	16
	1,390

The cost of transport of these patients by air was £24,902, although no charge was made by the RNZAF for the service aircraft concerned.

Road Ambulances

Hospital boards are required by statute to make provision for the transport of sick and injured patients, and they either do this work themselves or enter into an arrangement with a voluntary organisation to provide the ambulance service for their district.

Hospital boards which operate their own services had a combined fleet of 65 ambulance vehicles and 45 ambulance stations as at 31 March 1964. In addition, voluntary organisations operated, on a subsidised basis, 160 ambulance vehicles from 82 ambulance stations. During the same financial year 168,281 patients were transported, and the combined running totalled 2,071,168 miles.

Finance

Payments made by hospital boards to subsidise organisations during the year 1963–64 amounted to £208,432 for maintenance purposes and £5,885 for capital purposes towards the cost of purchasing six new ambulance vehicles. In addition to grants received from hospital boards, ambulance operators themselves provided a considerable sum of money by way of patients' fees and voluntary funds.

Ambulances operated by hospital boards incurred an expenditure of £48,597 for maintenance purposes, and consent was given for a capital expenditure of £16,108 for the replacement of six ambulance vehicles.

Policy

During the year the Ambulance Transport Advisory Board completed a review of the policy concerning ambulance charges and the method of paying subsidies to voluntary organisations.

Nutrition Section

The Department's Nutrition Section has continued throughout the year to provide an advisory service on all aspects of hospital dietary administration to hospital boards and to the Mental Health Division. Information on food and nutrition has been provided to the public, to Government Departments, and other organisations. The quarterly *Nutrition Newsletter* is increasingly in demand. The nutrition officer was a member of a medical team which carried out health surveys in the Cook Islands and in New Zealand.

The average number of dietitians employed by hospital boards rose from 45 in 1963 to 54 in 1964, and 18 candidates who successfully passed the State Examination for Dietitians have become registered by the Dietitians Board. Seventeen students have commenced dietetic training in 1965. Applications for the Department's dietetic bursaries were the highest ever received. Sixteen bursaries were awarded, and 22 renewed to home science students. All this indicates a healthy interest in dietetics.

Private Hospitals

The following tables give details, as at 31 December 1964, of the numbers of licensed private hospitals and the types of beds licensed. The comparable position as at 31 December 1963 is shown by the figures in parentheses.

Types of Hospital	Number of Hospitals	Number of Licensed Beds
Maternity	24 (25)	219 (236)
Medical and surgical	44 (44)	989 (951)
Medical (including convalescent)	73 (66)	1,227 (1,064)
Medical and children's (Karitane)	6 (6)	286 (286)
Maternity, medical, and surgical..	4 (5)	480 (462)
Psychiatric	2 (2)	31 (31)
Totals ..	153 (148)	3,232 (3,030)

Type of Bed	Number of Beds
Maternity	322 (346)
Medical and surgical	1,366 (1,303)
Medical (including convalescent)	1,287 (1,124)
Children's	226 (226)
Psychiatric	31 (31)
Total	3,232 (3,030)

The figures reflect the opening of some new and comparatively large geriatric hospitals by religious and charitable organisations, usually with the assistance of Government subsidy. On the other hand, another hospital has changed function from maternity to general beds during the year, and this illustrates a trend which has become apparent over the last three years.

2. PHYSICAL MEDICINE

Rehabilitation

An improving outlook on the value of medical rehabilitation in many hospital boards was noticeable during the year, and steps have been taken to set up more effective facilities in several hospitals, notably Christchurch and Palmerston North.

Plans for the new Spinal Injuries Centre for the North Island to be established at the Otara Civilian Rehabilitation Centre are well advanced and should shortly go to tender. In due course a similar unit for the South Island should be established at Christchurch.

The National Civilian Rehabilitation Committee met on many occasions and has conducted a survey of the facilities which exist throughout New Zealand to help disabled people. The Committee itself has inspected various organisations and premises in Auckland and Christchurch and is impressed by the amount of dedicated yet somewhat uncoordinated and sometimes even ill informed efforts being expended by a diversity of voluntary organisations. Outside Wellington, the Disabled Servicemen's Re-establishment League training centres are not being fully utilised by civilians, and, despite attention directed to these facilities in last year's report, there still seems too little awareness that these training centres are now open for the trade training of civilians.

A proper assessment of the capabilities of disabled people is necessary to prospective employers, if disabled people are to be placed in employment with a reasonable prospect of success. A voluntary organisation with Government support has been set up, as a pilot unit, in Auckland to see what can be done in this very difficult field.

Pukeora Home

This home for seriously physically disabled young adults continues to provide accommodation and activities for 39 disabled young persons who would otherwise have to be admitted to the chronic wards of public hospitals. Tenders will be called early in 1965 for its reconstruction and enlargement to enable it to take 80 residents. Group Captain Cheshire, V.C., on his recent visit to New Zealand, was impressed with the set-up, and thought that with the proposed additions it would well meet the present needs of this country.

Cerebral Palsy

In spite of all endeavours it has not been possible to extend the visiting cerebral palsy services to cover the country. Out of eight established posts, for most of the year only five full-time and one part-time therapists were employed.

The Cerebral Palsy Unit continues to act as a residential centre for the treatment of cerebral palsied children. Parents and others can get instructions in the handling of these patients at the Unit.

During the year there were 24 admissions, six readmissions, and 19 discharges. In addition 13 children attended the Unit daily as outpatients. Outpatients seen at clinics totalled 94, and 48 patients were visited in their own homes.

Rheumatic Diseases

Some research is in progress in New Zealand at Queen Elizabeth Hospital, Dunedin, Palmerston North, and Wellington.

Several of the larger hospitals are now establishing small rheumatic units where patients can seek expert advice and treatment. In addition, regular consultative clinics are being run by the medical staff of the Queen Elizabeth Hospital, at Wanganui, Hamilton, and New Plymouth. These clinics are welcomed by both medical men and patients in these areas, and will be extended to other areas on the invitation of the appropriate hospital board.

Physiotherapy

On 31 March 1965 there were 141 students in training. Details are given with figures for the previous year in parentheses:

Students Training at 31 March 1965—

First year, 62 including three Colombo Plan and seven repeat (60).
Second year, 42 including two Colombo Plan (42).
Third year, 37 including three Colombo Plan (52).
Total: 141 (154).

Students Qualified in May and November 1964 and February 1965—

May 1964, five passes (15), nil partial passes (2).
November 1964, 41 passes (49), three partial passes (5).
February 1965, one pass (a specially arranged examination).
Total qualified: 47 (64).

Student Teachers of Physiotherapy—

One candidate passed Part I of the examination in 1964.

During the year the Physiotherapy Board approved registration of 37 (27) overseas qualified physiotherapists. No applications were received for recognition for auxiliary physiotherapy employment (2).

Hospital Services—

Average number of staff: 240 (223·5).
Average shortage of staff: 13 per cent (14 per cent – corrected figure for the year 1963).

Three months post-graduate courses have been established at Christchurch Hospital in physiotherapy treatment by influence of the neuromuscular system. These courses are open to staff nominated by hospital boards. During the year two State and one student teachers examinations were held, 211 bursars were under contract of whom 110 were at various stages of training, 475 practising certificates and 200 licences were issued, and 100 registrations were effected.

Occupational Therapy

There are at present some 125 practising occupational therapists, an increase of 16 over the previous year. Of this number, 66 are employed by hospital boards, 50 in Government institutions (including schools run by the Education Department), and nine by private organisations.

During the year 26 students from the New Zealand School of Occupational Therapy qualified as occupational therapists; in addition 10 occupational therapists trained in the United Kingdom or Canada were admitted to the New Zealand register.

During the latter part of 1964, the roll of the New Zealand School of Occupational Therapy numbered 104, which included four Colombo Plan students and one student under the Commonwealth Aid to Africa Plan.

Substantial additions have been made in recent years to the premises of the School of Occupational Therapy, and present efforts are being concentrated upon maintaining and numerically increasing its teaching staff. The intake of students has risen from 12 in 1949 to 43 in 1964.

The tempo of planning of new occupational therapy departments and rebuilding or extension of old ones is increasing. In new homes and hospitals for the aged built by church and welfare organisations the provision of an occupational therapy department, including domestic rehabilitation facilities, is a welcome forward move. The services of a full-time occupational therapist in those homes for the aged which undertake hospital-type assistance and rehabilitation for patients capable of benefiting thereby are important.

Queen Elizabeth Hospital

Some difficulties were encountered in respect of mineral water supply cooling and ventilation for the hydrotherapy wing. However, the rebuilt hydrotherapy wing is now in full use.

The number of inpatients treated during the year was 795, and outpatients numbered 1,750.

In addition, 2,763 patients were given treatment at the main bathhouse.

3. CLINICAL SERVICES

Particulars of expenditure on health benefits will be found in table I of the appendix.

The total cost of items now included in the health benefits vote came to £18,254,220, an increase of £354,404 over the previous year. This was mainly due to the formidable increase in the cost of pharmaceutical benefits.

Pharmaceutical Benefits

This year's cost was £8,867,214, an increase of £953,648 over last year's total, when a drop in expenditure of £145,394 below the previous year was recorded. The average cost per prescription was 10s. 6¼d. as compared with last year's 10s. 1¾d. and 16,740,377 prescriptions (15,608,611 last year) were passed for payment, or 6·4 per head of population (6·1 last year).

It is not possible to be sure why this year's costs have been so high. There appears to have been an unusual prevalence of illness in the winter months, leading to an increased use of antibiotics and other drugs. Some doctors stated that in the early stages of outbreaks of upper respiratory tract infections they found that the less expensive sulphonamides were effective in controlling complications, but later on they found it necessary to resort to broad spectrum antibiotics. Doctors appear to have responded to the situation by issuing more prescriptions, rather than by seeing patients more frequently; it must be remembered that population increments alone would account for a rise of about 2·2 per cent:

Prescriptions Issued and G.M.S. Claims, Excess Over Previous Year

Quarter 1964–65	Percentage Increase Over Previous Year	
	Prescriptions Issued	G.M.S. Payments
	Per Cent	Per Cent
First (Apr-Jun)	+11·9	+3·6
Second (Jul-Sep)	+ 7·7	−4·2
Third (Oct-Dec)	+ 5·7	+5·9
Fourth (Jan-Mar)	+ 6·8	−1·0
12 months	+ 7·4	+0·8

These figures are consistent with mild epidemic conditions in the first and third quarters of the year, leading to the issue of more prescriptions than usual.

Additions to the Drug Tariff

The average cost per prescription is undoubtedly related in some degree to the number of new drugs made available on the "free list" each year. In 1958–59, analysis of the 81 items added to the Drug Tariff without special restrictions on their use showed that over 75 per cent must have tended to raise the average cost of prescriptions. (Annual report, 1959, p. 108). Changes in prescribing patterns would make it difficult to draw up an accurate analysis of the same kind now,* but the situation is unlikely to have altered much; new drugs are not getting cheaper.

The policy of the Advisory Committee is to make drugs available without restriction through chemists except when some question of safety is involved. If there is any doubt about the wisdom of encouraging the widespread use of a drug in private practice it is placed on the hospital board list with or without other restrictions. Caution may be indicated merely by the fact that the drug has not yet been used on a sufficient number of patients for its limitations to be properly assessed. Experience has shown that drugs obtainable only through public hospital dispensaries are seldom heavily prescribed, but that once they become available through chemists the drug firms are apt to push them at the doctors with all the resources at their command.

With a few notable exceptions, the question of cost now has little or no influence on the Committee in deciding whether or not to impose restrictions once a drug has been accepted for inclusion in the Tariff.

The following table shows the way in which the drug list has been amended during the past five years:

Drug Tariff, Additions and Deletions, 1960–65

Year	Additions			Transferred From Restricted List to Chemist Supply	Deletions
	Chemist Supply	Restricted	Total		
	(1)	(2)	(3)	(4)	(5)
1960–61	34	15	49	10	25
1961–62	20	10	30	3	2
1962–63	3	12	15	..	..
1963–64	39	27	66	5	5
1964–65	17	14	31	1	99
Total ..	113	78	191	19	131

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*In 1958–59 most prescriptions were for 10 days' supply. Ordinary prescriptions now are for seven days, but 30 to 40 per cent are for extended supplies for one month or more. It would be difficult to work out the cost of "average" prescriptions for a mixed selection of drugs.

Notes on Table

(a) "Chemist supply" means that the drug is available through chemists without restriction, although some items considered to be unduly expensive may be subject to a part charge.

(b) "Restricted" includes certain drugs available through chemists, but with some special type of restriction.

(c) Column (4): During the same period two drugs were transferred from chemist supply to the restricted category.

(d) Column (5): Practically all deletions were due to the removal of obsolete items from the official publications. Most had already passed out of current use in New Zealand.

As a result of the tightening-up of controls, both in the industry and elsewhere, since the thalidomide disaster (1961), the number of applications for the inclusion of new drugs in the Tariff has fallen, and the proportion accepted has increased. Six years ago the Committee was dealing with 180 applications a year and accepting about 25 per cent. Last year there were 108 separate applications, and 88 this year; about 50 per cent were accepted.

Assessment of Prescribing Costs

Doctors often ask for information about their own prescribing costs, and how they compare with the average for their area. Until this year no satisfactory figures were obtainable. The cost per prescription, the cost per prescription form, and the cost per service all involve variables which make them useless for purposes of comparison.

This year, surveys of five districts have been carried out on the basis of drug costs per patient per month. This can be worked out only for schedule doctors, and the process is long and laborious; but the results make it well worth while. No great reliance can be placed on figures of any kind in studies of prescribing habits, but in a mixed practice of any size with costs per patient per month one would not expect a very wide deviation from the mean from causes unrelated to the doctor's prescribing habits.

Charts for each district surveyed were drawn up and sent for information to every doctor concerned, showing (for one month):

Services per patient.
Prescriptions per patient.
Average cost per prescription.
Average cost of drugs per patient per month.
Average cost per patient: G.M.S. plus drugs.

Figures for all doctors in the area were supplied, reference numbers being used instead of names; each doctor was given his own reference number.

These charts have provided useful talking points in subsequent calls by the visiting practitioner. (See below.) Most doctors with high figures have expressed surprise, saying that they had looked on themselves as economical prescribers. Those near the other end of the scale were often surprised too.

Only tentative impressions can be based on a survey of 119 doctors in five areas; but the consistency of the pattern is striking.

Survey of Prescribing Costs in Five Areas

Area No.	Drugs per Patient per Month			Cost of G.M.S. Plus Drugs		
	Highest 20 Per Cent	Median	Lowest 20 Per Cent	Highest 20 Per Cent	Median	Lowest 20 Per Cent
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
I	35 10	23 3	10 4	49 8	36 2	23 7
II	28 2	19 9	13 7	38 10	31 0	24 7
III	28 9	19 4	11 7	41 0	31 6	24 5
IV	31 1	18 7	10 1	44 7	30 5	21 5
V	28 0	18 1	13 4	40 6	30 1	24 2
Total: 119 doctors	30 10	18 10	10 1	42 9	30 3	23 7

The highest and lowest figures for drugs were 40s. 7d. and 7s., and for G.M.S. plus drugs, 52s. 6d. and 18s. 2d. Although 9·2 per cent of doctors were 50 per cent above the median of their own districts for drugs alone, only four doctors (3·4 per cent) fell into this category for drugs plus G.M.S. costs. The latter is of course the more important figure.

These statistics are of considerable educational value, and most of the doctors concerned appreciate having them. Experience has shown that the majority of prescribers are very willing to cooperate in effecting economies once they are given the facts. This does far more good than any kind of disciplinary action.

Labelling With the Proper Name

In March 1964, the Council of the New Zealand branch of the British Medical Association resolved to support the proposal that medicines supplied on prescription should be labelled with the proper name unless the prescriber directs otherwise.

An inquiry was carried out to ascertain the views of the profession at large. This showed that 69 per cent of a random sample of doctors were in favour of the proposal. About 10 per cent were strongly opposed to it. Chemists' organisations were also against it, mainly on the ground that it would encourage self-medication and the passing on of drugs to other people, and that patients often transfer medicines from one container to another. Eventually, however, the Pharmaceutical Advisory Committee gave its support to a modified form of the original proposal.

From 1 April, in accordance with the Social Security (Pharmaceutical Benefits) Regulations 1965, containers for tablets or capsules have been labelled with the proper name unless the prescriber indicates:

(a) That he does not wish this to be done, or
(b) That he wishes the label to be marked with some other appropriate designation instead.

It has been pointed out, in a circular letter, that doctors who object to labelling with the proper name can avoid it by using the contraction "Not N.P." Those who are wholly opposed to the system could have this direction printed or rubber stamped on their prescription forms.

The strongest argument for this type of labelling is the fact that when patients are seen by other than their own doctors it is desirable that the nature of medicines already being taken should be ascertainable easily and accurately. As rota systems and partnerships increase in number, and new drugs become more potent and more liable to produce side effects, this consideration carries more force year by year.

Incidentally, it is reasonable to suppose that most patients will be less likely to transfer drugs from one container to the other if the label bears the proper name, than if it is merely marked "The Tablets" or "The Capsules".

Visiting Practitioner

Dr Peter McKinlay took up his appointment in April 1964, in succession to the late Dr Stuart MacKay. Dr McKinlay is stationed at Head Office, Wellington. A second appointment has been made, to be centred on Auckland, commencing about September 1965.

During the year Dr McKinlay visited 630 doctors spread widely from Auckland to the Bluff. Here are some extracts from his annual report:

> In almost every instance I think the visits were welcomed though on occasions after a cautious or defensive opening on the part of the recipient. Rural practitioners, in particular, feel isolated from their fellows, and are glad of an opportunity to discuss their problems with another doctor.
>
> There is general widespread appreciation of the Prescribers' Notes series. Criticisms are of a minor character. The overworked doctor welcomes them as reliable condensed post-graduate education, and the well-read doctor as useful summaries of his previous study.
>
> Details of drug costs and data on doctors' individual costs to public funds are well received, and are studied with considerable interest.
>
> The biggest prescribing problem facing doctors seems to be whether or not to prescribe antibiotics, especially the broad-spectrum group. Patient-pressure is a big factor which many doctors find difficult to resist, and the doctor who considers himself over-worked tends to play safe and use the broadest spectrum available to cover any inadequacy in personal supervision. The increasing range of drugs for which specific effects are claimed, usually at increased cost, aggravates the temptation to treat patients symptomatically rather than after full diagnosis, and of course tends to result in poly-pharmacy. Many doctors are commendably cost-conscious about drugs, and we must continue the uphill struggle to give doctors the necessary information to weigh against the high-powered propaganda of the drug manufacturers and sales promoters. Many doctors try to explain their high prescribing costs by claiming that they are continuing expensive treatment started in hospitals or recommended by specialists. Hospitals, in turn, sometimes blame their costs on inadequate supervision of extravagant prescribing by junior resident staff.
>
> Lectures to medical students and junior hospital staff must therefore be continued. I lectured at Wellington and Christchurch Public Hospitals during the year.

Medical Benefits

The cost of general medical services was £4,091,565, an increase of only 1·3 per cent over the previous year. In the past five years expenditure on this item has increased by only 4·1 per cent, although the population has risen by 11·3 per cent. The number of services per head of population was 4·2 this year (4·3 last year).

The only serious problem in connection with general medical services is maldistribution of doctors, particularly the growing tendency to a shortage in country areas. Rural doctors have great difficulty in disposing of their practices when they decide to move elsewhere, and death vacancies frequently remain unfilled. Yet the happiest doctors one meets are those in country practice.

A survey of medical services in Maori areas by medical officers of health showed that a serious problem exists in some health districts, particularly Whangarei, Rotorua, and Wanganui, and to a less extent in New Plymouth and Gisborne.

Abuse of the scheme either by patients or doctors is not a problem of any significance. Claims for general medical services by doctors seeing more than 50 patients a day are kept under regular scrutiny. Unless the medical officer of health is satisfied from his own knowledge that the quality of the service given is of a high order, an "informal preliminary inquiry" is carried out in conjunction with the British Medical Association. If the result is not satisfactory a formal complaint is lodged with the Disciplinary Committee.

Here are the figures for all doctors claiming for over 50 a day for more than brief periods during the past seven years:

Departmental Action: Doctors Claiming for Over 50 a Day
Period: August 1958 to March 1965

(1) Cases reported on by Medical Officer of Health in which "informal preliminary inquiry" was not recommended	115
(2) Informal preliminary inquiry held	46
(3) Total number of doctors involved	161
(4) Cases referred to Disciplinary Committee	18
Complaint substantiated	15
Not substantiated	3

It should perhaps be mentioned that no limit has been placed on the number of services a day which a doctor may provide. The Department's concern when high figures are recorded is solely with the quality of the service given. If the Disciplinary Committee finds that an unduly large proportion of services would not warrant payment of the full benefit, they may advise the Minister of Health to direct that the amount paid from public funds on any future claims be limited to a specified figure. At the end of three months the doctor may apply for any such direction to be revoked.

Most doctors showing high figures are working for long hours and at great pressure, and are giving excellent service; and many would be glad to cut down their practices if they found it possible to do so.

4. NURSING SERVICES IN HOSPITALS

A noteworthy event during the year was the approval by Government of new salary scales and markedly different conditions of employment for public hospital nurses. Following claims by the Registered Nurses Association and other employee groups and acting on advice by the General Salaries Advisory Committee to the Minister of Health, Cabinet, in May 1964, approved the setting up of a special committee on the pay and conditions of employment of nurses, male nurses, dietitians, occupational therapists, and physiotherapists.

Apart from salaries the basic claim by nurses was for full payment of all overtime and penal time. The nursing care of the sick is more than a job – it is a continuing discipline. There was, and remains, a traditional view that the application of such conditions to the employment of nurses is incompatible with their status and the true interests of the profession. While appreciating this view the Committee recorded that it felt bound to concede the justice of the nurses' claims, having regard to conditions in other fields of employment and indeed in some other branches of the nursing service. Cabinet adopted the report of the Committee and approved its recommendations which, on salaries, the Committee believed provided proper margins for higher nursing posts of responsibility and a career structure appropriate to the increasing technical and administrative responsibilities of the nursing profession in the country's public hospitals. The Committee's report provided similar conditions of employment for male nurses, occupational therapists, and physiotherapists and also new salary scales for these groups and for dietitians.

The Committee recommended that to establish proper relativity under the new scales it was necessary for establishments to be determined and approved for positions of ward sister and above. It was essential to undertake and bring to completion this task of magnitude before the new scales and conditions of employment came into operation towards the end of March 1965. No previous national approach had been made to senior nursing organisation and establishment and no precedents were available for help in planning either in New Zealand or in England and Wales.

A team of administrative and nursing officers devised a series of appropriate returns for supply of information by hospital boards. Subsequently they held discussions in Wellington with a substantial and representative number of matrons, and planned and carried through the exercise with a series of large-scale wall charts. The Director-General was able, by mid March, to send to the 37 hospital boards detailed establishments for all positions of ward, departmental, and theatre sister and above for over 200 public hospitals involved, together with circular advice of the principles which had been adopted.

It is now appropriate to consider nursing service, not only from the patient's point of view, but from the much wider angle of effective administration and economy.

Some hospitals now attract nursing staff in sufficient numbers while others, mostly those in less populated areas, still experience staff shortages. The time has come, however, when numbers of staff can no longer be considered a suitable criterion of satisfactory patient care.

This is not realised in some hospitals where registered staff are still doing many non-nursing tasks, or even holding what are essentially non-nursing appointments.

At present there are 12,245 nursing staff employed in public hospitals, and of these 3,961 are registered nurses.

In deciding the senior nursing establishments in public hospitals, generous allowance was made for the employment of afternoon and night supervisors. An increase in the numbers of this grade of nurse will provide more adequate supervision of untrained nursing staff, who have often been required to carry responsibility for patient care in excess of their experience.

By 1970 nursing service in hospitals should, it is hoped, be advanced to the stage that every ward has registered nursing staff coverage for 24 hours of the day.

The reorganisation of senior nursing staff duties will require more delegation of authority with the accompanying responsibility. Except in very small hospitals the day is past when matrons can occupy themselves with details of nursing care to any great extent. Their proper role now lies with the broader issues of sound and progressive planning and coordination of nursing services with other aspects of medical care.

Ideally no nurse's time should be dissipated in over-concern with non-nursing duties. Ideally no registered or student nurse should be allocated such patient care as can well be carried out by community nurses or registered aides. The number of community nurses needs to be substantially in advance of the present disappointingly low rate of training and recruitment.

Our pattern of nursing in hospitals shows that there are still not enough registered nurses using their knowledge and skill in giving direct patient care while at the same time it would seem others are being employed largely in what may be termed indirect nursing care. Changes are both desirable and necessary.

During the year, to assist nursing staff towards a better understanding of modern trends in nursing administration, education, and service in nursing, successful refresher courses were held for assistant matrons of general hospitals of under 200 beds, tutor sisters from all nurse training schools, and male nurses.

The Post Graduate School for Nurses continued its work of preparing registered nurses from New Zealand (and some overseas countries) for their future senior roles in all branches of nursing, and this work of the Post Graduate School will further increase as the need for higher training of registered nurses becomes even more pressing.

5. WELFARE SERVICES

Care of the Aged

Accommodation and Housing

(a) *Approvals for Additional Beds – Religious and Welfare Organisations*

Proposals from religious and welfare organisations for home and hospital beds, also some accommodation in flats, have been approved for Government subsidy assistance as under:

	Number of Schemes	Number of Beds	Government Subsidy £
Approved, 1964–65 ..	.. 15	Home: 76 Hospital: 53 Flats: 34	355,871
		163	
Total approvals, 1950–65 ..	..	.. 3,579	5,673,778

Included in the above approvals is a 32-bed home at Whangarei, the first to be provided in that centre by a voluntary organisation. Of the remaining approvals, the majority are in the Auckland region and include a 40-bed geriatric unit for the North Shore.

The additional beds authorised for the period under review continue to show a reduction on previous years, owing largely to the general improvement which has been achieved in home bed provision throughout New Zealand in recent years. In a number of districts the supply of beds will be reaching or exceeding 3 per cent of the elderly population, which surveys have established as being the required need at this level.

The summary below indicates the bed position in the North and South Islands:

Existing Home Beds	North Island	South Island	New Zealand Total
Hospital boards	594	515	1,109
Religious and welfare organisations	2,095	1,255	3,350
	2,689	1,770	4,459
Private old people's homes (estimated)	940	360	1,300
Total existing beds	3,629	2,130	5,759
Percentage of home beds to elderly population	2·59	3·09	2·76
Existing beds plus provision underway	4,004	2,157	6,161
Percentage of existing and prospective beds to total elderly population	2·86	3·12	2·94

(b) *Current Programme*

(i) *Religious and Welfare Organisations*

	Home	Hospital	Flats	Total
Beds completed 1964–65	97	70	6	173
Under construction	334	30	79	443
Authorised, construction pending	99	63	30	192
	530	163	115	808

(ii) *Hospital Boards – Old People's Homes*—With the commissioning of 60 new beds at Parkside Home, Dunedin, and 27 at Kynnersley Home, Westport, further progress has been achieved in the replacement of outmoded and unsuitable accommodation in hospital board homes. Schemes are in various stages of planning for replacement homes at Rotorua, Hawera, Nelson, and Riverton.

(c) *Pensioner Housing – Local Authorities*

The increasing efforts by local bodies to provide flats for pensioners is regarded as a growing recognition of the importance of suitable housing to the overall welfare of the elderly.

During the year, substantial increases have been achieved, both in the schemes approved and the amount contributed by Government for flats under construction. Subsidy and loan for the latter amounts to nearly £1 million.

(i) *New Proposals*—A total of 722 single units and 55 doubles have been approved for subsidy and loan, as follows:

	Number of Schemes	Number of Beds	Government Subsidy £	Government Loan £
Approved 1964–65	36	832	632,311	862,410
Total approvals to 31 March 1965		4,344	2,698,183	3,219,849

(ii) *Existing and Prospective Flats*—Thirty-one schemes involving 395 single and 12 double units have been completed in 1964–65, on a well distributed pattern. Two hundred and seven singles and 38 doubles are in the North Island, and 188 singles and 14 doubles in the South. An indication of the overall position as to existing and projected flats, is given below:

	North Island		South Island		Total	
	Singles	Doubles	Singles	Doubles	Singles	Doubles
Completed flats	972	527	947	536	1,919	1,063
Authorised	800	65	206	9	1,006	74
Local bodies	1,772	592	1,153	545	2,925	1,137
Add flats built by Government	..	752	..	279	..	1,031

(iii) *Size of Settlements*—In a few cases, the number of flats proposed in settlements is higher than considered desirable, and this is an aspect which is being raised with local bodies contemplating large settlements.

In two proposals in Auckland area, where the settlements will be in the region of 100 or more units, the local authorities are to provide a residential warden and a social room. Government has agreed to help with subsidy and loan for warden's accommodation in certain cases, while the social room amenity will be assisted from Government lottery sources.

Fire Protection

The increasing extent of old people's home accommodation in New Zealand over recent years has pointed to the need for adequate fire-protection standards. In an endeavour to meet this, officers of the Department and the Ministry of Works have prepared and issued a code of practice to hospital boards and religious and welfare organisations providing residential care for the elderly.

The code will apply in all cases where assistance is provided by Government towards the capital cost of a home.

Meals on Wheels and Laundry Services

Eight hospital boards inaugurated new meals-on-wheels schemes within their districts, and in practically all existing schemes the service has been extended. The number of elderly people assisted increased from 1,587 to 1,925, and total meals supplied for the year increased from 355,300 to 416,334. Latest figures represent an increase of 100 per cent in the past four years. The service continues to operate successfully as a joint effort by official and voluntary workers for the benefit of the elderly.

Laundry services are provided by 11 hospital boards and one voluntary organisation. There is a steady increase in the number of elderly and other persons being assisted under this scheme.

Regional Welfare Councils

The formation of a separate Old People's Welfare Council to serve the North Shore, Auckland, is welcomed, as are like moves at Whangarei, Napier, and Wanganui.

Government Lottery Funds

The generous measure of assistance provided from "Golden Kiwi" funds towards club rooms and social centres for the aged is enabling a considerable number of old folk's organisations to establish these amenities on a much wider and more adequate scale than previously. Through its liaison with the Welfare of Aged Persons Distribution Committee, the Department is able to assist with advice in planning these centres and also develop a useful link with the organisations concerned.

Accommodation for Young People

Subsidy assistance totalling £80,449 has been authorised by Government during the year towards four youth hostel projects. Three of these will provide accommodation for 72 more young women, and the fourth enables a young men's hostel in Auckland to be extended on a large scale from 65 to 132 beds.

Since Government commenced to provide subsidy for youth hostels, a total of £603,384 has been approved in respect of 1,112 beds.

6. TUBERCULOSIS

The statistical tables showing the incidence of new cases notified and mortality will be found in the appendix to the report. Points of importance to be noted are:

(1) The decline in the number of new cases notified.
(2) The further fall in mortality which has now reached an all-time low.
(3) The small number, 203, of notified cases in an infectious state.

Important as these figures are in indicating steady progress, considerable value must be placed on the results of Mantoux testing of children particularly of the five-year-old group. In future years this figure will provide an important index of the efficiency of control measures. There are, however, indications that, in some localities, certain of the smaller skin reactions are non-specific and may well be caused by infection with non-pathogenic mycobacteria. Some work on this aspect has already been undertaken and more is contemplated.

BCG vaccination was administered to 33,034 persons and 48,004 secondary school children were tuberculin tested.

The Department's mass miniature X-ray units X-rayed 351,743 people and discovered 175 active cases of tuberculosis. This represents a rate of 0·49 per 1,000 examined. During the year the Department assisted the Medical Research Council's expedition to Pukapuka in the Northern Cook Group by providing a technician to assist with the programme.

The necessity for special hospital accommodation for treatment of tuberculosis continued to decline, and this resulted in the closure of yet another institution, Otaki Sanitorium of 72 beds, which first opened in 1906.

PART III—BUREAU OF MENTAL HEALTH SERVICES

1. MENTAL HEALTH

Statistics, Mental Health Division Hospitals

(a) *Admissions and Discharges*

During the year ended 31 December 1964, there were 7,077 admissions to the various hospitals of the Mental Health Division (including 480 to Queen Mary Hospital, Hanmer). There were a total of 7,038 removals from the registers by discharge or by death (including 480 discharges from Queen Mary Hospital). Voluntary admissions, excluding Queen Mary Hospital, were 3,730, a drop of 374 on the previous year's figure. Informal patients accounted for 1,243 admissions, 112 more than the previous year. There were a total of 1,619 patients admitted as a result of formal committal orders, an increase of 24 on the preceding year. The total number of persons under care, including those on trial leave (18,870), was 422 higher than last year, but the average number of occupied beds (10,489) increased by only two on the previous figure.

(b) *Voluntary Outpatients and Day Services*

The total attendances were around the 5,000 mark at established day services, representing 68 enrolled patients.

(c) *Outpatient Services*

A total of 5,125 individual patients was seen in consulting and therapeutic sessions at the various outpatient clinics conducted by the medical staff of the Mental Health Division. In all, these patients registered 17,975 attendances during the year.

(d) *Comment*

The comparatively small variation of the figures for admission and discharge to mental hospitals as between 1963 and 1964 are not of great significance. The slight downward trend of voluntary admissions has continued. The increase in the number of patients admitted under some type of formal order is more than accounted for by the larger number of patients admitted this year (448 as compared with 341) for observation, assessment, or treatment in terms of Part IV of the Mental Health Act.

The trend towards some levelling off of demand for beds, commented on in last year's report, is still apparent but cannot yet be considered to have great significance. It needs particularly to be remembered that there are very considerable waiting lists for admission to the special hospitals and training schools for the care of the mentally subnormal.

The figures for outpatient services, showing as they do a drop in the total number of patients seen but an increase over all in the number of attendances, reflect some gain in the provision of therapeutic, as well as consultative, sessions at various outpatient departments. The widely dispersed outpatient services provided by some hospitals are imposing particular strains on the medical staff concerned, and it seems likely that early consideration will have to be given to redesigning the outpatient commitments, at least in some areas. While the value and the desirability of providing consultative services to general hospitals wherever possible is fully recognised, it is not justifiable to do this if it involves the uneconomic disposal of psychiatrists' time in much travelling.

Although occasional use is made of provisions for voluntary outpatients to attend most hospitals, regular day services are only established as yet at Sunnyside Hospital, Christchurch, at Levin Hospital and Training School, and at St. John's Home, Mangere. Experience amply confirms the impression that day hospital care for the psychiatric patient is relatively expensive in terms of the proportion of trained staff required. An intensive therapeutic programme can only be achieved if a senior psychiatrist is able to spend at least half of his working day in the unit. It follows that with the present relative ratio of senior medical staff no rapid expansion of day services is to be expected. The situation is very different at a psychopaedic hospital where day patients can be readily fitted into the pattern of activities and training without disproportionate demands on existing staff.

Professional Staff

(a) *Medical Staff*

The present strength is 65 full-time staff and 11 part-time staff (exclusive of the visiting consultant appointments). The sessions worked by the part-time medical staff are the equivalent of some five and a half full-time doctors. Of the full-time medical staff 10 are on study leave overseas, four of these holding departmental bursaries. The present establishment, set in 1960, is 74.

From these figures it will be apparent that the effective medical strength at the hospitals is below the desirable level. Adequate services to inpatients and outpatients are maintained only by long hours of work and by relying heavily upon the services of the other professional members of the psychiatric team, particularly nurses, social workers, and psychologists.

Although there has been a much more satisfactory rate of medical recruiting to the Division's hospitals over the last five years, there has been a parallel increase in the demand for both inpatient and outpatient services. A further factor which has tended to diminish the effective strength of the medical staff is the number on post-graduate study overseas. During the year four members of the junior medical staff on study bursaries and six medical officers on leave without pay were studying at various post-graduate medical centres in England and Australia.

It is fully appreciated that for this proportion of the medical staff to be on study leave poses particular problems in maintaining services and must inevitably provide a further burden for their colleagues. The disadvantages of this are deliberately accepted. It is recognised that the professional efficiency of the Division can only be guaranteed by ensuring that there is an adequate number of appropriately experienced and trained psychiatrists constantly being added to its medical strength.

It is intended to continue the policy of giving every possible encouragement to medical staff who wish to do post-graduate study. Now that formal post-graduate teaching in psychiatry is available at the Otago Medical School, medical staff at the Seacliff group of hospitals will be able to take full advantage of this. The decision of the Otago University to provide training appointments at Registrar level in the Department of Psychological Medicine at the Medical School is very welcome as a step likely to lead to a further strengthening of the country's overall resources.

At the very best it will be some few years before worth-while results of this policy can be apparent. There can, however, be no doubt that investment in the appropriate professional training of the young psychiatrist is the best insurance for the future of mental health services in New Zealand.

Coupled with the need to provide opportunities for training in psychiatry, there has for some time been full recognition of the desirability of diversifying the type of medical appointments available in the Division of Mental Health. To this end the Division is seeking to recruit paediatricians for appointments at the special hospitals and training schools for the mentally subnormal. Other specialised types of appointments in the fields of child psychiatry, geriatrics, and E.E.G. are under consideration. It is also proposed to establish the post of Assistant Director, Clinical Research, and appoint to this post a person with high academic qualifications, both in psychiatry and in general medicine, who will act in an advisory capacity to the Director, as well as having day-to-day responsibility for clinical research projects and in the training of the Division's professional staff.

Entry of General Practitioners—Inquiries are still received from general practitioners of long experience who seek appointment to the Division's hospitals. The contribution which these experienced doctors can make to the overall standards of care and treatment in a psychiatric hospital is very great. A number of doctors recruited in recent years who have had no intention of specialising in psychiatry have nevertheless found a professionally interesting and rewarding career in this special category.

(b) *Clinical Psychologists*

Although there are at present only seven full-time and two part-time clinical psychologists at the Division's hospitals, it is expected that further appointments will be made early in January when trainees are selected for the course at Canterbury University in conjunction with the Department of Psychology, Sunnyside Hospital, Christchurch.

The first clinical psychologists to complete their formal training under this scheme should be ready to take up appointments early in 1965.

(c) *Social Workers (Psychiatric)*

Strength as at 31 December 1964 was 22 of whom 17 have an appropriate training and academic qualification in social work. Although the number of social workers available at hospitals and clinics still falls short of what could be wished, the increasing preponderance of qualified social workers in the group is very satisfactory.

(d) *Nursing Staff*

There are still vacancies for both male and female nurses. The Division is 164 below the establishment figure of 1,212 for male, and 238 below the establishment of 1,010 for female, nurses. The shortage of female nurses is, however, appreciably diminished by the appointment of 180 part-time staff. There has been little fluctuation in the staffing figures throughout the year.

(e) *Staff Training*

Refresher courses for qualified nursing staff have been run throughout the year within the limits of the staff-training resources of the Division. These courses, usually of a week's duration with a group of up to 16 nurses in residence at one of the hospitals, have proved very popular and are of undoubted value. The demand for participation in courses is at present greater than the teaching and administrative staff can cope with. This thirst for professional knowledge on the part of the nursing staff is a very healthy sign. It is of particular importance at a time when rapid changes are going on in the practice and organisation of both psychiatric and psychopaedic hospitals and when the role of the psychiatric and psychopaedic nurse is changing to meet the new professional requirements of mental health services.

(f) *Provision for New Services*

During the year an additional establishment was created for Mangere Hospital and Training School in anticipation of the need for further trained psychopaedic nursing staff when that hospital comes into operation. Additional students who wish to train can meantime be accepted at Templeton, Levin, or Braemar. This arrangement, in addition to making provision for foreseeable needs, also enables the Division to take advantage of situations such as that at present obtaining at Braemar, where there is a waiting list of candidates for training as psychopaedic nurses.

Services for the Intellectually Handicapped

Despite the growth of services in the community, the pressure for beds in the special hospitals and training schools for the mentally subnormal is still acute, and long waiting times, even for urgent cases, are usual rather than exceptional. Both urgent and routine waiting lists are kept at all hospitals. Admissions are arranged with strict reference to order on the waiting list. Claims for urgency are accepted only after appropriate investigation of the case on the basis of medical and, if appropriate, social-work reports on the circumstances of the family and the needs of the patient.

Mangere Hospital and Training School—At present there are five villas being built, and provision is also being made for staff quarters and administrative buildings. The building of further patient accommodation is to begin early in 1965. While it seems likely that some beds will become available before the end of 1965, it is unlikely that Mangere will be operating as a fully functional hospital before 1966.

Frequent public references to Mangere as a "children's psychiatric hospital" have given a false impression of this hospital's function and purpose. It is a psychopaedic hospital for the reception and care of the mentally subnormal of all grades and of all ages. In common with the other special hospitals and training schools of the Division it will, when necessary, provide life-long care for the mentally subnormal. Admissions will not be restricted to the younger age groups. Adult patients will be accepted as appropriate and, as always, when beds are available. Provision is also made for day services.

Community Services—There is steady growth in the provision of local services by voluntary organisations principally through the activities of the Intellectually Handicaped Children's Society. The range of these services is still increasing, as is their diversity. This is most encouraging evidence of a genuine involvement of local communities in the planning and operation of projects to assist their own handicapped citizens.

Day Care—During the year the terms of capital subsidy provisions were extended to cover day-care centres. These centres, where both the pre-school intellectually handicapped child and the very severely handicapped of all ages can be cared for during the day, provide a service of the greatest value. There has not previously been any systematic attempt to provide help for those families who are carrying this particular, and often very heavy, burden. The initiative of the Intellectually Handicapped Children's Society in setting up such centres is to be commended. It is to be hoped that day-care centres will in the future be included in all comprehensive community projects.

Short Stay—It is noticeable that the demand for short-stay beds in local units seldom, if ever, comes up to the predictions made some years ago. It is common experience that a significant number of cases requiring short-stay accommodation pose problems in management and nursing control that are beyond the resources of small local units. Whenever practicable, short-stay beds are made available in the Division's hospitals to meet situations such as this.

Geriatric Admissions

There is steadily increasing use of the informal provisions of the Mental Health Amendment Act 1961 for geriatric admissions. Some hospitals are experiencing difficulty in returning to the community, or transferring back to other institutions, a sufficient number of geriatric patients who have stabilised under psychiatric hospital treatment. It has for a long time been a tradition in the Division's hospitals that no patient in urgent need of psychiatric care and treatment is ever refused a bed. This tradition has been maintained even in times of most acute shortage of staff and with overcrowding much more serious than exists today.

Whether this policy should be maintained and whether, in particular, it should be maintained unmodified in the geriatric field is open to question. The responsibility of admitting informal patients who are mentally infirm rests with the superintendent of the hospital concerned. Some superintendents are already giving thought to the establishment of waiting lists and to the appraisal, by outpatient consultation, of the urgency of cases for which beds are requested. Arrangements such as these are in accord with practices in very many services abroad, and, from the professional point of view, there is no doubt whatever about their desirability.

In one area, a policy has already been established of requiring other geriatric services to accept a stabilised patient in exchange for a case in urgent need of psychiatric treatment. It is in every way desirable that a two-way traffic of this sort, which has long been advocated, should come to be accepted practice in the management of geriatric problems with psychiatric complications.

Food Services Supervisors

During the year food services supervisors were appointed to all major hospitals, and the success of these appointments is, in all cases, apparent. The standard of menus, of cooking, and of food service generally has improved. The Division is fortunate in the calibre of people found to be available for these appointments, and the enthusiasm which they have all brought to their new and rather exacting jobs is very refreshing. There is still scope for a further improvement to the catering services at hospitals in terms both of quality and efficiency, and a good deal of planning is going on both at Head Office and at local levels to put into effect a number of changes both in design and equipment of kitchens and in the general organisation of cooking services at the individual hospitals.

Retirements

During the year four senior superintendents who have given long service to the hospitals of the Division of Mental Health retired. These were Dr B. D. Hart, Porirua; J. D. Hunter, Sunnyside; G. M. Tothill, Oakley; and A. W. Wilkinson, Queen Mary Hospital, Hanmer. The loss of these four senior experienced superintendents will be very much felt and it is appropriate that they should be formally thanked for the many years of devoted service they have given. Dr J. S. V. Mouat, Medical Superintendent, Levin Hospital and Training School, also resigned during the year to take up an appointment as consultant psychiatrist at a well known English mental deficiency hospital.

Appreciation

Increasingly, members of the public are becoming directly involved in the work of the Division's hospitals. The group holding official appointments comprising the hospital chaplains, the district inspectors, and the official visitors, although small in number, contributes much devoted work often of a quiet and unobtrusive kind and makes, both individually and collectively, substantial contributions to the hospitals' work. The special thanks of the Division are due to them.

Gratitude must also be expressed to the large and increasing numbers of voluntary workers who bring with them, as they visit the hospitals, such a unique contribution to the care and rehabilitation of patients and who provide such enormously valuable links between the hospital and the community which it serves.

To the staff of the hospitals in all categories is due also thanks for the interest and enthusiasm which they bring to the common task of providing appropriate care and treatment for their patients.

2. EXCERPTS FROM REPORTS OF MEDICAL SUPERINTENDENTS OF SELECTED HOSPITALS

Levin Hospital and Training School

All the departments of activities, occupational therapy, and industries with woodwork have been working fully and consistently, with regular consideration of suitable spheres for specific patients at monthly conferences with the visiting psychologists, social workers, etc.

The higher brackets of intelligence are also screened in similar manner regarding education in its available grades, often with individual concentration on selected patients in intensive sessions of a half-hour duration, where indicated. These are conducted under the Kimberley school teachers.

Under these facilities 12 patients attend as "day" patients, that is, they live in their homes but come to the hospital each morning in a bus, or by taxi, or on bicycles, with advantages both to the patients and to their homes.

New buildings are still required and this should receive absolute priority over everything else in relation to the service for the mentally subnormal. It is not enough to be up to date. One must be ahead of time. It will be seen that this paragraph is not strictly in the nature of a report, but is included to attract attention with the suggestion that its imperative importance may be gauged from scrutiny of a few cases of families with names on the waiting list, at present in the files of the social workers.

A new villa has been planned for the treatment of multiple-handicapped patients, cerebral palsies, and similar cases of "organic" aetiology, and several members of the senior staff were allowed to study work in such a villa in Orokonui.

Visitors from many sources were shown round the hospital during the year: parents of patients; members of the Intellectually Handicapped Children's Society, of women's organisations, scholastic and nursing bodies; and not a few were from overseas – Thailand, India, Malaysia, etc.

But the highlight of the year was undoubtedly the visit of Their Excellencies the Governor-General and Lady Fergusson in November. This visit was regrettably brief owing to Sir Bernard's other responsibilities, but the inspection of the various wards and departments had been carefully planned, and their Excellencies showed keen interest in all branches of care and treatment of the patients.

Sunnyside Hospital

There has been comparative stability of staff in the occupational therapy department throughout the year with the result that the department has been able to develop a more positive approach. During the early months of the year the department was attempting to cope with some activities normally undertaken by a recreation officer. Thus a basketball team of teenage girls was coached by one of the occupational therapy aides; a weekly dance (modern style) was organised for teenage patients of both sexes; and a small choir was formed. A hospital magazine was successfully launched at the end of the year. A start was also made with industrial therapy – accommodation was a difficult problem here, and also it was found difficult to obtain commercial orders. However, a contract for ice-cream cartons was referred from Templeton Hospital and Training School and has been since carried out at Sunnyside. During the next year the new admission ward should be completed and opened. Here there is adequate accommodation for occupational therapy so that one will have some scope to plan altered use for the existing premises.

Community interest and attitudes are difficult to assess. During the year the patients have been allowed greater freedom than formerly, particularly in respect of the two sexes mixing together. For a period this gave rise to unrestrained behaviour on the part of some of the younger patients until a fixed code of behaviour was laid down. Matron reports that there was much adverse comment regarding this behaviour. The senior medical officer and head male nurse, however, both report an improvement in public attitude and interest.

With the limited resources of medical staff, individual psychotherapy is limited to a very small number of patients except for supportive psychotherapy. The senior psychologist also treats a small number of cases referred to him.

In my opinion the part played by nursing staff in this form of treatment is of great importance and not given the recognition which it deserves.

There is a process of graduation from occupational therapy to more practical employment in readiness for discharge. It is difficult, however, to arrange a full eight-hour working day for pre-release patients.

The day hospital has a social committee and once a month social evenings are held for patients with their relatives and also former patients. Much of the programme at the day hospital is arranged in consultation with the patients as a whole. A patients' cricket team plays in the suburban cricket association competition. Both indoor and outdoor bowls are popular and matches are arranged with visiting teams. A basketball team of female patients played a number of fixtures.

A small choir has been formed during the year. There is no drama group as such but drama has played a part in the occupational therapy programme.

Films are shown twice weekly in the recreational hall and once or twice a week in the security block.

During the year snooker, billiards, indoor bowls, and cards are played sometimes in interward competition.

A patients' committee has organised the production of a hospital magazine.

A noteworthy and pleasurable event during the year was the visit paid to Sunnyside Hospital by Their Excellencies the Governor-General and Lady Fergusson.

Seacliff Hospital

Although the transfer of administration and acute admissions from Seacliff to Cherry Farm has solved some of the problems due to the major part of the hospital being separated from the administration, it has created other equally difficult problems due to the fact that important essential services are still sited at Seacliff. This move, however, will enable the administration to observe more closely the developments at Cherry Farm. This move has also necessitated the interchange of patients and staff between the different branches of the hospital and has given an opportunity to effect a more equitable distribution of the sexes between Cherry Farm and Orokonui and to obtain a greater degree of integration between the male and female nursing services.

Our accommodation for the mentally subnormal children at Orokonui is overcrowded, and we have a waiting list. Templeton has only been able to take a limited number, and we have not been able to provide beds suitable for these children quickly when illness or other emergencies in their family makes their urgent admission desirable. It is hoped that the transfer of these children to ward 4 annex and male reception at Seacliff will enable this waiting list to be reduced.

The emotionally disturbed children and adolescents have usually been extreme problems to their parents, Child Welfare Division, Police, Children's Courts, and sometimes Borstal and Her Majesty's Prison for Women, before they have been admitted here. Many of them have average, and some well above average, intelligence. Some are of school age, and some in their later teens have an educational defect through truanting and lack of attention. During the third term of this year the Education Department has opened the Cherry Farm school with one teacher, but there are already sufficient pupils to keep him occupied and the review by the educational psychologist of patients whose names have been submitted by the hospital indicates that there are sufficient potential pupils to warrant the opening of another classroom.

Whereas in the past it has been the tendency to occupy the better integrated patients in one activity throughout the week, there has been a growing tendency to organise patients' occupational activities so that they have a more varied programme, are tested out in a greater variety of skills, and prevented from developing repetitive unimaginative activities which they could carry on while continuing with their psychotic ruminations.

The more rapid turnover of the acute able-bodied psychotic patients means that a large percentage of our long-stay population are severely handicapped or physically infirm. The division of patients between various sections of the hospital also results in a smaller number of patients being able to assist in any one section of the hospital in our many duplicated and triplicated services. The schizophrenic activation group, however, has provided a male working force with a team spirit that has been able to tackle quite a number of projects effectively and at the same time gain considerable benefit in doing so. Their varied programme of occupational and recreational activity throughout the day appears to enable them to concentrate better on their activities, whether it be work or play.

PART IV—SPECIAL BRANCHES

1. NATIONAL HEALTH INSTITUTE

Medical Laboratory Technologists Board

This Board was set up in April and comprises three members nominated by the Society of Pathologists, three members nominated by the New Zealand Institute of Medical Laboratory Technology, the Director of the National Health Institute, and Dr J. P. Kennedy of the Health Department as Chairman.

Of the 86 candidates who sat the Intermediate Examination in March 74 were successful in passing the examination.

Two final Certificate of Proficiency Examinations were held in April and October, and a total of 23 candidates passed the examination.

I. Epidemiological Section

The very large field covered by hospital cross infection has meant that the epidemiologist has, again this year, had referred to him a wide range of problems related to the architecture, interior finishes, ventilation, and air conditioning of hospitals. Advice has also been asked on sterilisation problems and on the most suitable antiseptic for a variety of purposes. The Hospital Bulk Purchasing Organisation and the Government Stores Board have sought assistance in the economic purchasing of the most suitable equipment and material.

In order to answer many of these queries, special tests have had to be devised to enable the required qualities to be evaluated.

Air Conditioning of Operating Theatres and Labour Wards

The traditional method of preventing and treating surgical shock with warmth has led to theatre and labour ward staff having to work in uncomfortably warm and humid conditions. This has not made for efficiency. Changed ideas on shock treatment and prophlaxis would allow medical and nursing staffs to work in conditions optimal for comfort and efficiency. An indirect benefit of this change is a lower potential for infection.

Two types of packaged portable air-conditioning equipment have been tested. The requirements of low noise level, absence of spark hazard, and minimal recirculation of air have so far not been found together. Only equipment depending on evaporation of water has proved satisfactory, and this will function only in climates of low humidity.

Large centrally installed air-conditioning plants will of necessity be more costly but so far appear to be more reliable and more effective.

Other Hospital Problems

The present architectural fashion for large expanses of glass is providing a problem of high temperature peaks at hours varying with the orientation of the wards. In one set of newly completed wards the temperature rose to over 100°F in the early afternoon in a summer which was not unusually warm.

Noise in hospitals is another problem in this era of stainless steel benches and nursing equipment together with reverberating corridors.

Ceiling tiles designed to reduce noise frequently accumulate dust which apart from being unsightly may constitute a potential source of infection. This matter is still being investigated.

Cross infection in hospitals has not been limited to the staphylococcus. An outbreak due to Salmonellae in one obstetrical unit caused the deaths of three babies. Streptococcal infections have also been troublesome. However, the staphylococcus remains a problem, and in two areas a staphylococcus of phage type 75/77 has caused a number of infections and has been a persistent hanger-on in wards to which it has gained access.

II. Laboratories

The number of specimens received has shown a small increase from 10,620 in 1963 to 11,132 in 1964. Several special investigations have been undertaken. These include a serological follow up of persons vaccinated against leptospirosis, a survey of poliomyelitis immunity in New Zealand, a trial of Guthrie's test for the detection of phenylketonuria in the newborn, a comparison of different tests used in testing urine for sugar, and a survey of the quality of imported peanuts. The comparison of different methods of testing urine for sugar is being done in conjunction with the Wellington Hospital laboratory and is not yet completed. Further details of the other projects are given below.

General Bacteriology

The total number of specimens examined was 5,397, 57 fewer than the number examined in 1963.

Dysentery and Food Poisoning—Among the cultures received there were four different types of dysentery organism. The most common was the causative organism of Sonne dysentery. Extensive outbreaks of this form of dysentery occurred in the South Island.

Though this laboratory is the national centre for food poisoning organisms, cultures of all isolations are not sent here so that the proportions of different types identified may not reflect their true incidence in the country. However, it is clear that *Salmonella typhimurium,* of which 152 cultures were received, is the commonest type in New Zealand as elsewhere. One type, *oslo,* isolated from a schoolboy in Oamaru, was identified for the first time in New Zealand. The different types of interic food poisoning and dysentery organisms identified during the year are set out below.

Types of Enteric, Food Poisoning, and Dysentery Organisms

S. typhi, Vi-phage type A	15	*S. oranienburg*	1
S. typhi, Vi-phage type C1	2	*S. bovis morbificans*	44
S. typhi, Vi-phage type D1	7	*S. enteritidis*	7
S. typhi, Vi-phage type E1a	17	*S. dublin*	1
S. typhi, Vi-phage type E9	3	*S. anatum*	45
S. typhi, Vi-phage type 38	1	*S. newington*	5
S. typhi, untypable	4	*S. senftenberg*	11
S. paratyphi A	2	*S. mississippi*	1
S. saint paul	1		
S. derby	36	*Shigella sonnei*	115
S. typhimurium	152	*Shigella flexneri,* type II	5
S. oslo	1	*Shigella flexneri,* type III	5
S. cholerae-suis	2	*Shigella flexneri,* type VI	6

Leptospirosis—One thousand eight hundred and sixty-one serum samples were examined for antibodies to leptospira. Of these 283 samples were taken as part of surveys or from vaccinated persons. Of the routine specimens 163 from 115 patients were positive. These positive results indicated that *Leptospira pomona* was the infecting serotype in the majority of cases.

During the year a leptospiral vaccine containing *pomona, icterohaemorrhagiae,* and *hyos* was used in the Waikato and to a lesser extent in other areas. To assess the efficacy of the vaccine pre-inoculation and post-inoculation samples of serum were taken by doctors from many of their patients. Up to the end of the year 52 paired samples had been received. A response to the vaccine by the development of antibodies or a rise in antibodies to one or more of the vaccine strains was shown by 19 persons. In 20 persons the development of or increase in antibodies to types other than those in the vaccine may have represented a response. In 13 persons no difference was found between pre- and post-inoculation samples.

Toxoplasmosis—During 1964 2,198 serum samples were received for toxoplasma tests. No survey samples are included in this number which were all from patients. Insufficient clinical details were received with these specimens to decide how important toxoplasma infection is in New Zealand. Eighty-one patients had high levels of antibody, suggesting recent infection, and the commonest clinical picture was a glandular fever type of disease. In the past 10 years since testing for this disease started at the National Health Institute 23 definite cases of the severe congenital disease have been diagnosed. There have been 18 other cases in which congenital toxoplasmosis was a possible diagnosis.

Hospital Cross-infection Laboratory

Apart from the routine phage typing of about 3,000 staphylococcal cultures and maintenance of our own and the base hospital laboratories' supplies of phage, all cultures which were untypable with the basic typing set were tested with three experimental phages sent to us from Colindale, London, for assessment for their possible inclusion in future basic typing sets. Unfortunately, none of our strains reacted with the new phages, although Australian workers have found them of some use in identification of their otherwise untypable cultures.

Of special interest was a milk-borne outbreak of food poisoning in Whitianga. The causative organism was found to be a staphylococcus, phage pattern 6/7/42E/47/53/54/75/83A/81.

The section has also undertaken the testing of various equipment and preparations for use in home and hospital, among which were disinfectants, germicidal hand creams and soaps, disposable products, especially those made of paper, and the bacterial examination of several machines in use, such as bed-pan washers, dish washers, and baby incubators.

Summary of Routine Examinations

Staphylococcal cultures typed	3,100
Specimens examined for coagulase positive staphylocci	65
Antibiotic sensitivity tests	68
Disinfectant tests	90
Examinations for the epidemiologist	987
	4,310

Vaccine Laboratory

The new vaccine laboratory was completed in February. This has allowed the complete separation of bacteriological testing procedures from the sterile production process. The control bacteriology is all done in the old vaccine, now designated standards, laboratory. Certain other work has also been undertaken in the standards laboratory.

During the year production of vaccine in embryonated eggs was increased, and a total of 22 new and experimental batches were prepared. A new seed lot was made in rabbits and freeze dried in small amounts. New batches prepared from this seed have been very satisfactory.

Experiments have been carried out to find a quicker method of testing the potency of vaccine batches. Chick embryo fibroblast cultures were used in conjunction with routine testing in tissue culture in embryonated eggs.

Issues of smallpox vaccine increased to a total of 65,000 doses. Because of the difficulty of transporting vaccine over long distances and the problems of storage it has been decided to freeze dry all vaccine produced. A freeze dryer and other necessary equipment have been ordered, but, owing to delays in the arrival of the equipment, full operation will probably not be effective until 1966.

Standards Laboratory

Phenylketonuria is an inborn error of metabolism which, untreated, results in mental deficiency. A pilot trial of the Guthrie test, a new method of testing for phenylketonuria in newborn babies, has been conducted. That the method was effective was proved with the cooperation of the medical superintendent of Braemar Hospital. Tests were successful in detecting the single case of phenylketonuria in the hospital. In the pilot trial 875 specimens have been examined. No positives were found but as the incidence is only about one in 10,000 this was to be expected. The object of the trial was to define the problems of extending the test to every baby born in New Zealand.

The section conducted preliminary tests on batches of peanuts suspected of containing aflatoxin. Visual examinations were made for the presence of fungus, and extracts prepared and tested chemically by thin-layer chromatography and biologically in ducklings.

Virus Laboratory

There has been a moderate increase in the volume of work in this laboratory. The number of specimens received increased to 913. These comprised 499 specimens for virus isolation, 179 paired serum samples, and 56 single serum samples. Approximately 15,000 tissue cultures, 8,000 mice, and 550 embryonated eggs were used in testing these specimens.

Virus Isolations—Specimens were received from 425 patients, and 60 viruses were isolated from 57 of these patients, an isolation rate of about 11 per cent. The types of virus are shown in the list below.

Virus	No.	Virus	No.
Adenovirus, type 2	2	Coxsackie B, type 5	19
Adenovirus, type 5	1	Coxsackie B, not typed	1
Adenovirus, type 6	1	Poliovirus, type 1	1
Adenovirus, other	3	Poliovirus, type 2	1
Coxsackie A, type 2	5	Poliovirus, type 3	1
Coxsackie A, type 6	5	Herpes Simplex	7
Coxsackie A, type 10	5	Myxovirus influenzae A2	7
Coxsackie B, type 3	19		

In addition five viruses were isolated from 17 sewer swabs.

Enteroviruses—The epidemiology of Coxsackie B viruses in New Zealand is becoming clearer. The various strains replace each other in succession, one strain being dominant for a period usually of several months. In 1963 Coxsackie B5 was most prevalent, but our last isolation of this strain was from a case of asceptic meningitis in Napier on 5 February 1964. On 17 February 1964 Coxsackie B3 was first isolated from a case of Bornholm's disease in Wellington, and this strain remained prevalent until the end of May. No further strains were isolated until early in December when a Coxsackie B, type 4, was isolated from a sample of sewage from Moa point, Wellington.

Three strains of poliovirus were isolated during the year, one of each type. The type 1 virus was isolated from a fatal case of poliomyelitis occurring on board ship and not in New Zealand and is a reminder that fresh strains may be introduced at any time. The type 2 virus was isolated in July from a one-month-old baby suffering from myocarditis and whose mother had died of myocarditis. At about this time a small type 2 outbreak was recognised in Melbourne, Australia. The type 3 virus was isolated from the faecal swab of a two-year-old child who had been in hospital in Wairoa for the preceding year suffering from infantile eczema. There was no known contract with Sabin vaccine strains in either of the last two cases. It may be possible to identify vaccine strains by producing sera specific for the Sabin viruses, and such a specific antiserum was made for type 2 late in 1964. It is hoped to identify strains as "wild" or "vaccine" with more certainty in the future.

Influenza—A short sharp epidemic of type A2 influenza occurred in June 1964. Seven strains of *Myxovirus influenzae* type A2 were isolated and proved to be similar to the A2 viruses which had affected Europe in the winter of 1962.

Virus Serology—In addition to the serological tests needed for special projects, complement fixation tests were done on paired serum samples as follows, 247 for adenovirus, 22 for psittacosis, and two for mumps.

Special Projects—1. In 1964, the examination of 97 further faecal swabs completed the investigation of normal and ill children in Wairoa mentioned in last year's report. The results from 398 swabs from 151 children in 101 families, showed the amount of enterovirus infection occurring throughout the year in children was between 10 and 15 per cent per month. In this hemisphere the peak of enterovirus infection may be in the autumn months of April and May. Observations extended in time and to other localities would be needed to confirm this.

2. Beginning in February the Virus Laboratory collaborated with the College of General Practitioners in Wellington in an investigation of ulcerative conditions of the mouth occurring in adolescents. From 38 patients 12 viruses were isolated, six Herpes Simplex, three Coxsackie A, two Coxsackie B (the current B3), and one adenovirus. Three Coxsackie B3 viruses were isolated from controls.

The investigation will be continued to define more closely the appearances of the throat in herpangina.

3. Two years have elapsed since the polio-vaccine mass campaign, and the time seemed opportune to assess the immunity of the population to see if booster vaccine doses are likely to become necessary. An investigation in collaboration with the virus laboratories in Auckland and Dunedin was started in the latter part of the year. In each area, 200

serum samples are to be collected from a cross section of the community and examined for poliomyelitis antibodies. The work is uncompleted, but preliminary results show little, if any, waning of immunity to poliomyelitis. The results are reassuring except in the youngest age group (under 2) where the proportion without antibody suggests the acceptance rate for the vaccine might be improved. The immunity of adults and older children is partly due to natural infection, but children are now growing up whose immunity is wholly dependent on the artificial stimulation of vaccine. It will be very important to examine, from time to time, the sera of these children, particularly those born from 1962 onwards, to make sure their immunity is long lasting.

Research Laboratory

1. *Routine Choline Esterase Tests*

Testing of blood specimens from workers handling organophosphate insecticides has been continued, and no noticeable change has occurred in our experience in New Zealand. Careful workers are handling these insecticides without any sign of ill effects, though there is always some danger from accident, casualness, or faulty equipment.

2. *Aflatoxin in Imported Peanuts*

Hodges, Mortimer, and Smith reported in February that they had found the potent cancer-producing agent, aflatoxin, in peanuts bought in Hamilton *(N.Z. Medical Journal,* 1964, 63, 112.). This toxin can be produced by growth of the mould *aspergillus flavus* in peanuts under tropical conditions, and its carcinogenic action was first reported in 1961. It was therefore important to know what proportion of our peanut imports was affected, and what control measures could be adopted.

Sampling of our peanut imports was accordingly begun by the Department in April, and specimens of the mould and of a representative toxic peanut meal were obtained from London by Dr Manning. At this stage, equipment for the chemical test developed at the Tropical Products Institute, London, was not available, but work begun by Dr Manning and Miss Norris indicated that this test would probably be the most serviceable for checking our imports. Accordingly, testing was begun in the Research Laboratory as soon as the equipment arrived, and the first reports by the chemical method were made on three samples during September. Subsequently, samples from 37 lots have been tested, and the test for aflatoxin has been found positive on three occasions (parts of the same consignment). It is expected that testing will continue for six months when the position will be reviewed and the available information used for ensuring the safety of this important foodstuff.

3. *pH Buffers for Work With Low Metal-ion Concentrations*

It is a commonplace of laboratory experience that artificial cultures of tissues and of many micro-organisms will often show inconstant behaviour. So there is a need for media to give better control of acidity and of the activity of metal ions during growth. Known, non-toxic, stable buffers which would facilitate such control are few in number and a search is in progress for new substances to fill some of the gaps in the range available.

2. NATIONAL RADIATION LABORATORY

Introduction

The Radioactive Substances Act 1949 provided legislation for the safe use of all sources of ionising radiation and established the Radiological Advisory Council, consisting of seven experts. This Council advised the Government on the three regulations issued under the Act:

(a) The Radiation Protection Regulations 1951, amended in 1954.
(b) The Transport of Radioactive Substances Regulations 1951.
(c) The Radioactive Substances Appeals Regulations 1954.

The National Radiation Laboratory (previously known as the Dominion X-ray and Radium Laboratory) administers the Act and the regulations and provides the services and facilities which ensure that the purpose of the Act is achieved, i.e., the protection of "the health of persons likely to be exposed to harmful radiation".

I. Field Services

During 1964 a total of 376 visits were made by the Laboratory's radiation officers.

The visits, which involved calibration and survey measurements and work on problems associated with radiation protection, were made to X-ray installations and radioisotope laboratories and sources used in the following types of work: medical diagnostic, hospital departments (67), private practices (39), mass X-ray units (6); medical therapeutic, deep radiotherapy departments (15), superficial therapy establishments, hospital or private (32); dental (161); chiropractic (24); veterinary (4); industrial (18); shoe fitting (2); educational and research facilities (8).

Special visits were made to a number of establishments in addition to the periodic series of field tours. Measurements and advice were contributed on four new industrial applications.

II. Laboratory Services

(a) *Occupational Exposure*

Since 1951, the Laboratory's monitoring film service has been used to determine the external radiation dose received by persons occupationally exposed to radiation. The monitoring film results are compared with the results of routine safety surveys made by the Laboratory's radiation officers in establishments where ionising radiations are used. This measure has assisted in maintaining a very high standard of radiation hygiene throughout New Zealand.

During the year 1964, 15,991 personnel monitoring films were processed and reported on. In addition 1,186 films were used for special tests which included regular checks of protection around shoe-fitting machines and the surveying of areas occupied by non-radiation workers which are not routinely monitored.

During 1964 the equipment required for the assessment of neutron exposure was installed, and neutron monitoring films were calibrated, using the University of Canterbury's 2 curie Plutonium-Beryllium neutron source. The new neutron monitoring service is being put into operation in January 1965. Until then, neutron monitoring films used in New Zealand have been evaluated in Australia by arrangement with the Australian Atomic Energy Commission.

The results of the monitoring service clearly show that the dose received by persons occupationally exposed to radiation has gradually decreased from year to year. This trend is due not only to the growing awareness of the potential radiation hazards, to improved protection methods, and to the educational effect of regular safety checks, but also to the intelligent cooperation of the radiation workers themselves, who have realised the nature of the hazard and the importance of taking adequate precautions. The efforts of the radiation workers themselves have thus contributed greatly to the success of the radiation-protection service.

(b) *Supply of Therapeutic Applicators*

During the year 48 orders from hospitals and medical practitioners for radon applicators were fulfilled from the Laboratory's radon extraction plant. Radon was dispatched in the form of 502 gold-cased "seeds", 30 gold-cased "needles", and four tubes of radon ointment. The radon dispatched totalled 474 millicuries at the time of use.

The strontium-90 beta ray applicators kept by the Laboratory for hire to medical practitioners were on hire for 106 days. Less use was made of these applicators this year because three of the most frequent users have now obtained their own applicators.

(c) *Radiation Measurements*

In seven New Zealand radiotherapy departments there are 27 dosemeters and treatment monitors. Calibrations were made during half-yearly visits to individual radiotherapy departments on these instruments. These calibrations extend over the full range of radiation qualities used in New Zealand. The physical measurements are supplemented, where required, with advice on instrument performance and maintenance. In some cases defective dosemeters have been returned to the Laboratory for repair, and these have, after further calibration, been brought back into service.

The Laboratory's remotely controlled isodose plotter has been loaned to a hospital for further measurements under a cobalt teletherapy unit in association with wedge filters.

A number of cobalt-60 training sources were calibrated at the Laboratory for the armed forces, and further measurements and advice on neutron dosimetry were provided to two university departments.

(d) *Technical Services*

The Laboratory's technical services provide not only routine service and maintenance work, but they also develop and construct new equipment to meet the special requirements of the Laboratory.

The Environmental Radioactivity Section required the construction of three 1,800-watt electric hotplates, of a number of thermostat switches, and of a four-unit stirrer and hotplate for polonium measurements, which had to be built to a modified design meeting the needs of an improved method.

Standardised carrying kits of tools and measuring equipment were designed and built to give the Laboratory's radiation officers the most efficient and convenient use of these instruments during field work.

During 1964 alterations and additions in the Laboratory also required considerable work in building benches and cupboards for the neutron film monitoring service, polythene plumbing to replace copper plumbing attacked by acids, modifications to fume cupboards, the heat insulation of the Standards Laboratory, the water-cooling supply of the new beryllium window X-ray tube, and extensions and modifications of the Standards Chamber track.

(e) *Administrative Services*

The administrative services of the Laboratory provide up-to-date records of licences and registers of all sources of ionising radiation, they control the importation of all radioactive substances into New Zealand, and in addition to undertaking the clerical and statistical work of the Laboratory, the administrative services keep records of the radiation monitoring film results, provide the Laboratory's library and photographic services, and carry out all the non-technical work associated with the radiation monitoring film service.

(f) *Checking Potential Contamination*

A system is being developed for the regular testing of sealed radioactive substances used in industry. A suitable device for the collection of any radioactive contamination which may be present close to a radiation source is sent out by mail and, after use according to instructions provided, is returned to the Laboratory to be tested for radioactivity.

(g) *Advisory Services*

A considerable part of the radiation officer's time is spent in answering inquiries from licensees on many aspects of radiation work in medical, industrial, and research applications. When advice on the design of new departments has to be given, the assistance extends over many aspects of the proposed work, covering the general functional layout of laboratories, the selection of suitable instruments, arrangement of equipment within individual working areas, barrier shielding, storage and waste disposal of radioactive substances, and decontamination facilities. This type of work requires close cooperation between licensees, architects, engineers, and Laboratory officers.

Advice was given on the design, layout, and protection to be provided in 11 major establishments and for nine smaller units.

With the increased use of radioisotopes the number of problems related to waste disposal has increased. A study was made of the waste-disposal problems of 11 institutions.

(h) *Education and Training*

In addition to the presentation of papers at scientific meetings and the courses undertaken at the Laboratory, a considerable number of addresses on radiation hazards and protective measures was given by the staff to interested public groups.

As initiated last year, a four-day course of lectures and demonstrations on elementary radiation surveys was given to senior health inspectors.

III. Environmental Radioactivity

The measurement of radioactive fall-out in air, rain, milk, and bone samples has been continued on a routine basis. The measurement of naturally occurring radioactivity in environmental samples has been continued also, and new programmes in this field have been started. The results of fall-out measurements are published in the Laboratory's quarterly reports *Fall-out in New Zealand* which receive world-wide distribution.

(a) *Fall-out Monitoring*

(1) *Total Gamma Activity of Air-filter Samples Collected Near Ground Level*—The continuous sampling of the atmosphere at Auckland and Christchurch for airborne radioactivity was maintained during 1964. The air filters were changed three times weekly at each collecting station and measured for total gamma activity at the Laboratory. More than 300 air-filter samples have been measured during the year.

(2) *Total Beta Activity of Fall-out Deposited on the Ground*—In order to observe any changes in total deposition, the collection of rainwater at Christchurch Airport was continued during the year. The rainwater collecting pot is changed four times each calendar month and the contents are processed and measured for total beta activity.

(3) *Strontium-90 in Rain*—The routine measurements of strontium-90 in rain samples collected monthly from our nine New Zealand collecting stations, and three-monthly from Fiji, continued throughout the year. The results of these measurements show that the average deposition of strontium-90 for all New Zealand collecting stations has increased steadily over the past five years. The depositions for the years 1960, 1961, 1962, 1963, and 1964 were 0·9, 1·2, 1·6, 1·8, and 3·6 millicuries per square kilometre respectively. The station with the highest annual deposition was Greymouth with 7·8 mc/km^2. The lowest was Christchurch with 1·3 mc/km^2. The marked increase in Southern Hemispheric fall-out during 1964, two years after the cessation of nuclear testing in the atmosphere, may be explained by the delayed transfer of long-lived fission debris from the northern to the southern stratosphere. The seasonal increase in fall-out was particularly noticeable during the third quarter of 1964 when the New Zealand average deposition reached 1·3 mc/km^2 for the quarter. This value was more than twice as much as any previously measured quarterly average.

(4) *Strontium-90 in Soil*—Until the beginning of 1964, strontium-90 in New Zealand soil samples has been determined by the United States Department of Agriculture as part of their world-wide network of measurements. The results for the December 1963 collection range from 16·7 mc/km^2 for Greymouth to 6·3 mc/km^2 for South Canterbury. During the year several different methods for the radiochemical analysis of soils, all based on the use of strontium-85 for the radiometric determination of strontium recovery, were tried in this Laboratory. Excellent agreement with the United States Department of Agriculture's values was obtained on the samples so far analysed. Calculations based on the results of measurements on soil and rainfall show that the New Zealand average accumulation of strontium-90 in soil at the end of 1964 is approximately 13 mc/km^2 with individual values ranging from about one half to nearly twice this value.

(5) *Strontium-90 in Milk*—The routine monitoring of milk from eight areas in New Zealand has continued throughout the year. The average level of contamination for all stations has increased during the last four years. For the years 1961, 1962, 1963, and 1964 the level in milk was 4·9, 6·1, 7·1, and 10·8 strontium units respectively. Greymouth milk continued to have the highest concentration during 1964 with an average level of 26·0 strontium units. The lowest level was in Christchurch milk with an average level of 2·6 strontium units.

(6) *Strontium-90 in Bone*—Twenty post-mortem samples of human bone from nine different localities have been analysed during 1964. The samples range in age from still-born to 84 years, and the levels of contamination range from 0·1 to 2·2 strontium units, the younger age groups having the higher levels of strontium-90.

Twenty-three samples of rabbit bone collected during the period 1951–58 by the Animal Ecology Division of the Department of Scientific and Industrial Research have been analysed for strontium-90 as part of a programme for determining the rate of fall-out during the years prior to the commencement of routine measurement. Five samples collected during 1963 and 1964 have also been analysed so that correlation with measured fall-out rates may be obtained.

(7) *Caesium-137 in Milk*—The ratio of fission product caesium-137 to naturally occurring potassium-40 has been determined routinely in monthly milk samples from eight areas throughout the year. These measurements are made by direct gamma counting of the liquid or dried milk prior to radiochemical analysis for strontium-90. The results show that the average level in New Zealand milk was 56 picocuries caesium-137 per gramme of potassium with individual values ranging from 6 to 168 pc Cs^{137}/gK.

(b) *Measurement of Naturally Occurring Radioisotopes*

Fifteen post-mortem samples of bone from our bank of bone-ash samples collected for strontium-90 measurements have also been measured for radium-226 by a radiochemical separation method followed by alpha scintillation counting. Remaining samples in the bank and any future samples received will also be analysed. In addition an evaluation is being made of the lead-210 in these samples. A survey of lead-210 fall-out was made for all New Zealand rainwater-collecting stations for June 1964. It was decided to conduct a 12-monthly survey at four selected collecting stations. This survey started in November 1964.

Locally purchased New Zealand made cigarettes were measured for polonium-210 by a method which includes the wet oxidation of organic matter and the spontaneous plating of polonium on a silver disc which is then measured for alpha activity by a scintillation method. The results were compared with published results for two United States brands of cigarettes, and the comparison was sufficiently interesting to warrant further investigation. Samples of locally grown and imported tobaccos from the United States, Rhodesia, and South Africa were obtained. At the end of 1964, 29 samples had been measured for polonium-210.

(c) *International Intercomparison Samples*

Apart from this Laboratory's internal quality control consisting of calibration checks and the analysis of standard and blank samples, we are currently analysing samples supplied by the International Atomic

Energy Agency as part of a world-wide project of intercomparison of low-level radioactivity measurements. The intercomparison samples measured during 1964 were as follows: Sr^{90} in sea water, milk powder, and bone ash; Cs^{137} in milk powder and meat ash; Ra^{226} in bone ash.

IV. Research and Developmental Work

(a) *Radiation Doses to Patients in Diagnostic Radiology in New Zealand*

An extensive survey of radiation doses received by the skin and gonads of patients in New Zealand during diagnostic X-ray examinations was completed in September. It covered all forms of diagnostic radiology – medical, mass miniature chest, chiropractic, dental, and shoefitting. In addition to measurements during examinations in hospitals and private radiological practices, a questionnaire was filled in by radiographers throughout New Zealand for each examination conducted by them during a given period. By this means a further representative set of information was obtained which made use of the available calibration of the X-ray machines made as part of the Laboratory's routine field work. The field and "technique form" surveys together enabled doses to be calculated for a total of 3,881 medical diagnostic examinations.

The results of the survey are given in a paper by Messrs B. D. P. Williamson and A. C. McEwan entitled "The Genetically Significant Radiation Dose to the Population of New Zealand From Diagnostic Radiology" which has been submitted for publication.

The Laboratory's nation-wide radiation monitoring film service enabled an assessment of the annual genetic dose to the population from the exposure of radiation workers to be made. In spite of the increase in the proportion of radiation workers in the population over the years 1954 to 1963, the contribution to the genetic dose in 1963 was only one-third of the 1954 figure.

The sum of the contributions to the annual genetically significant dose from all types of diagnostic radiology in New Zealand amounted to 14 mr. This figure compares favourably with the published results of surveys made in other countries which have conducted similar surveys.

(b) *Radiochemical Analytical Methods*

The analytical capability of the Laboratory has been extended during the year to include a wider range of nuclides and sample types. Much of this has already been mentioned in Section III. The Laboratory's ion exchange methods for strontium-90 in rain, milk, and bone were published during the year in *Health Physics,* and the method has been modified to include the determination of lead-210 in rainwater when required. The range of sample types in which strontium-90 is determined has been extended to include soil, and three different radiochemical methods have been used on soil aliquots for purposes of method comparison. The method for radium-226 in bone ash was found to be reliable for Taro ash, and an endeavour has been made to modify the method to allow a tenfold increase in sample ash to be analysed. This would give greater sensitivity in measuring bone ash samples with low radium-226 concentration.

The method for determining polonium-210 in bone ash and tobacco was established during the year.

(c) *Gamma-ray Spectroscopy*

The scope of the work of the section was greatly increased by the acquisition of a 512-channel pulse height analyser and its accessories. The new equipment was checked for sensitivity and reproducibility, and calibrations were made for the routine gamma-ray analysis techniques and, with a variety of chosen geometrical sample forms, for a number of natural and artificial nuclides.

In addition to increasing the number of routine samples which can be evaluated this equipment is particularly useful in identifying and assaying the gamma activity present in contamination samples from institutions using unsealed radioactive substances. Since its installation more than 60 such samples were analysed.

From May onwards the monthly samples from the five milk-powder stations in Taranaki were analysed separately instead of being pooled to give a district average. The reason for the more detailed investigation is that milk from the district has an unusually high caesium-137 to strontium-90 activity ratio. Values obtained over the year varied from about 20 in the summer to about 10 in the winter. The Waikato area showed a similar pattern with lower values, while most of the other districts indicated little seasonal effect, their values ranging between 2 and 6.

V. General

(a) *Publications, Addresses, Lectures*

During the year the staff was associated with the publication of three scientific papers. The normal four quarterly fall-out reports were issued. Twelve addresses were given on the radiation matters related to the Laboratory's work, and 35 lectures were presented in training or educational courses.

(b) *Overseas Tours of Duty*

In May Mr H. J. Yeabsley, Assistant Director, attended an IAEA symposium on the assessment of radioactive body burdens in man held at Heidelberg, Germany. On his return journey Mr Yeabsley stopped over at Bombay where he spent four days with the Indian Atomic Energy Commission, visiting their facilities at Trombay and discussing matters of mutual interest with officials of the establishment.

During November, Mr J. F. McCahon delivered a series of five lectures on radiation dosimetry and gave other assistance to a regional training course in the medical uses of radioisotopes, in Manila. This Course was organised jointly by the International Atomic Energy Agency and the Government of the Philippines. Towards the end of the year Mr McCahon visited McMurdo Station in the Antarctic as a guest of the United States National Science Foundation. Since radioactive materials originating in the nuclear power reactor at McMurdo must, from time to time, be shipped through New Zealand, the visit enabled direct discussions to be held on detailed arrangements for making these shipments. Under an IAEA fellowship Mr B. D. P. Williamson departed in September for 12 months' post-graduate study in health physics at the New York University Institute of Environmental Medicine.

(c) *Participation in International Intercomparison Measurements*

The visit in October 1964 of Dr G. Gomez-Crespo, IAEA radiotherapist, was the result of the New Zealand Government's agreement to participate in an international intercomparison of I^{131} thyroid-uptake measurements. Dr Crespo visited the isotope clinics established at the Auckland, Palmerston North, Wellington, Christchurch, and Dunedin Hospitals. In addition to the physical measurements made Dr Crespo gave lectures and demonstrations on clinical aspects of radioisotope scanning techniques which created great interest amongst the clinicians at the various hospitals visited.

Technical Report

A more comprehensive report on the work of the Laboratory, incorporating more detailed and statistical information, is available from the National Radiation Laboratory, P.O. Box 1456, Christchurch.

PART V—MISCELLANEOUS

1. BOARD OF HEALTH

Two meetings were held and two new committees were established, one to examine and advise upon matters dealing with the care of the aged, the other to inquire into and give advice upon matters affecting the medical profession and medical services.

One report (No. 10) was published in the Board's Report Series and two others, viz, on hospitals sterilisation and hospitals dental services, were approved for publication. The complete list of published reports in this series is as follows:

No. 1, *Psychiatric Services in Public Hospitals in New Zealand.* March 1960.
No. 2, *Outpatient Services in Public Hospitals in New Zealand,* March 1960.
No. 3, *Services for the Deaf in New Zealand* (interim report), March 1961.
No. 4, *Medical Examination of Young Workers in New Zealand,* March 1961.
No. 5, *Provisional Grading of Public Water Supplies in New Zealand,* April 1962.
No. 6, *Services for the Deaf in New Zealand,* April 1962.
No. 7, *Employment of Dental Technicians in New Zealand,* November 1962.
No. 8, *The Introduction in New Zealand of the Metric System in Pharmaceutical and Medical Practice,* February 1963.
No. 9, *The Training and Employment of Health Inspectors in New Zealand,* October 1963.
No. 10, *An Evaluation of the Administration and Servicing of New Zealand Water Supply Undertakings,* October 1964.

2. INTERNATIONAL HEALTH

During the second year of New Zealand's current three-year period of representation on the Executive Board of the World Health Organisation Dr H. B. Turbott was elected Chairman. With this appointment Dr Turbott has held every office in WHO it is possible for a national delegate to hold.

Membership of WHO Expert Advisory Panels at December 1964

Brucellosis:
  Dr M. B. Buddle, Director, Wallaceville Animal Research Station.
Cardiovascular diseases:
  Professor Sir Horace Smirk, Director of Wellcome Research Institute.
Chronic degenerative diseases:
  Dr B. S. Rose, Superintendent, Queen Elizabeth Hospital, Rotorua.
Dental health:
  Professor G. N. Davies (residing in Australia).
Health education:
  Dr H. B. Turbott, former Director-General of Health.

Health statistics:
Mr C. E. Gardiner, former Medical Statistician.
Insecticides:
Dr D. P. Kennedy, Director-General of Health.
Nursing:
Miss P. Goodwin, Matron of Napier Public Hospital.
Miss E. B. Orbell, Assistant Director of Nursing.
Public health administration:
Dr N. R. E. Fendall (residing in Kenya).
Trachoma:
Professor R. P. Wilson, Professor of Ophthalmology, Medical School, Dunedin.
Zoonoses:
Professor J. A. R. Miles, Professor of Microbiology, Medical School, Dunedin.

3. NURSES AND MIDWIVES BOARD

The year 1964 can be considered as the most important in the history of nursing in New Zealand since 1901 when the Nurses Registration Act and 1904 when the Midwives Act were passed.

The passing of these Acts made registration in New Zealand compulsory for all nurses. At that time New Zealand was considered to be in the forefront of the world in matters concerning nursing, especially in regard to conditions and training for nurses.

Up till 1964 a New Zealand nurse graduate could register in England without difficulty. In 1928 the General Nursing Council for England and Wales advised New Zealand that it now had an Act making registration for nurses compulsory and New Zealand would be expected to conform to its conditions. New Zealand was in the very happy and secure position of being able to say it had had a Registration Act for over 20 years, and English nurses would be required to meet our conditions for reciprocity. Today the situation has changed completely, and the General Nursing Council has imposed certain conditions which affect New Zealand considerably.

The basic English requirement is that a nurse training school shall have a properly arranged Education Committee, a minimum average occupied bed rate of 240, and not less than 100 student nurses in training.

New Zealand criteria for a nurse training school is that not less than 40 beds are available to the public free of charge, and this criterion has stood for many years.

Unforeseen developments in the social pattern of this country and in advances made in medical science have altered the whole pattern of nursing in New Zealand. Transport has become comparatively easy for the vast majority of people, and small town social activities have become less attractive to the teenager who is a prospective nursing recruit. Medical care programmes are more economical of personnel, equipment, and beds if their specialised services are more concentrated in larger towns and cities.

This has led to the continuing trends:

(1) Even basic clinical experience for nurses becomes limited in some of our smaller nursing schools.

(2) Availability of student nurses and registered nursing staff tends to fall to and even remain below an acceptable level in a number of smaller hospitals.

Throughout the year the question of reciprocity greatly concerned the Board. After considerable correspondence with the General Nursing Council for England and Wales only 12 of New Zealand's 41 nursing schools were accepted for reciprocal registration. Nurse members of the Board sought support of the Registered Nurses Association for a proposal to send the Registrar to England to negotiate personally with the Registrar of the Council. As a result of the Registrar's visit, New Zealand now has 18 acceptable training schools. Students from the remaining 23 schools are required to have further periods of training varying from six to 24 months before they will be eligible for registration with the Council for England and Wales.

The Board is firm in its policy to train nurses to meet New Zealand needs and standards. As at 31 December there were 4,580 student nurses in training, and of this number 82 per cent were in training in the 18 schools accepted. However, it is fully aware that student nurse recruitment may possibly be affected in some of those training schools whose students do not have full reciprocity with England, and consequently maintenance of nursing service might present future difficulties. The Board has therefore accepted the community nurse to be a second category of nurse to help fulfil nursing needs in this country.

Although the community nurse training scheme was inaugurated by the Department of Health over three years ago, it is disappointing that so far only 22 hospitals have commenced a training programme for this category of nurse. It is thought that some of the resistance to commencing this programme has been due to the fact that no provision was made for State registration for the community nurse. Accordingly the Nurses and Midwives Board is to seek the approval of Parliament for the Nurses and Midwives Act to be amended to allow for registration of community nurses.

The June State examinations in nursing this year gave rise to much concern on account of the unprecedented failure rate. In accordance with its responsibilities, the Board arranged for a complete survey of this examination. It is now investigating the present methods, control, and conduct of examinations, to ascertain if any changes are warranted in this present system.

Four general and two special meetings of the Board were held during the year. The special meetings, one of which had full Board representation, and the other nurse membership representatives with additional co-opted members, were held for the purpose of discussing the new conditions of reciprocity as laid down by the General Nursing Council for England and Wales.

After 14 years as a member of the Board, the last four as Chairman, Dr R. G. T. Lewis retired at the end of 1964.

At its November meeting the Board expressed its appreciation to Dr Lewis for his guidance, his carefully studied verbal opinions, and his tactfully constructed written ones which had been of great assistance to the Board over the years.

Dr Lewis's successor as Chairman is Dr G. Blake-Palmer who was a member of the Board during the years 1960–63.

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TABLE 1—Health Benefits: Statement Showing Expenditure Since 1 April 1955

—	1955–56	1956–57	1957–58	1958–59	1959–60	1960–61	1961–62	1962–63	1963–64	1964–65
*Subdivision I—Maternity Benefits**										
	£	£	£	£	£	£	£	£	£	£
Public hospital fees	753,404	776,321	780,364	873,755	892,692	905,389	989,239	1,002,877	990,133	..†
Private hospital fees	200,532	190,613	180,222	181,254	185,978	184,679	194,808	177,269	198,494	188,749
Medical practitioners' fees	396,494	398,848	440,563	411,661	432,170	441,276	474,677	584,151	581,803	565,273
Medical practitioners' milage fees	14,929	14,732	16,131	17,223	19,198	20,581	21,137	20,507	19,536	18,544
Obstetric nurses' fees	4,705	4,153	3,055	4,102	3,693	5,026	3,717	2,943	2,691	2,081
Private hospital loans	6,500	30,100	29,024	54,498	28,130	99,774	71,467	70,763	10,866	3,206
	1,376,564	1,414,767	1,449,359	1,542,493	1,561,861	1,656,725	1,755,045	1,858,510	1,803,523	777,853
Subdivision II—Medical Benefits										
Capitation fees	4,412	4,412	4,411	4,412	4,411	..	..	..	..	..
Capitation and general medical services milage ..	197,493	207,292	219,505	205,362	214,860	193,445	182,918	169,050	156,523	155,483
General medical services	3,275,171	3,510,971	3,626,825	3,680,520	3,931,273	3,950,639	4,084,558	4,016,092	4,038,776	4,091,565
Special arrangements under section 32	63,470	69,166	73,019	76,572	87,094	91,755	112,329	118,809	119,352	134,840
Purchase of sites and erection of residences for medical officers appointed under section 32 ..	7,534	5,221	4,132	2,780	5,723	8,959				
Remuneration, allowances, and expenses of medical practitioners in areas other than those covered by section 32	..	..	..	..	..	..	..	..	..	..
	3,548,080	3,797,062	3,927,892	3,969,646	4,243,361	4,244,798	4,379,805	4,303,951	4,314,651	4,381,888
*Subdivision III—Hospital Benefits**										
Treatment in public hospitals	3,662,651	3,564,457	3,595,714	4,252,604	4,255,681	4,322,413	4,782,976	4,797,526	4,866,804	..†
Outpatient treatment	341,875	397,716	414,234	414,602	414,460	413,921	414,458	412,953	417,188	..†
Treatment in private hospitals	579,542	601,126	616,964	755,215	770,358	789,907	942,361	939,225	1,205,330	1,302,474
Treatment in approved institutions	95,453	107,057	111,789	117,153	125,275	129,936	80,140	92,849	97,912	116,527
Private hospital loans	68,151	179,368	180,210	196,423	64,577	15,795	25,659	86,937	83,203	150,517
Private hospital subsidies	3,028	..	..	..	..	..	..	..	..	..
Grant to Royal New Zealand Society for Health of Women and Children towards operating costs, Karitane hospitals	13,966	19,729	11,513	38,522	19,901	13,239	13,977	8,204	7,930	13,354
	4,764,666	4,869,453	4,930,424	5,774,519	5,650,252	5,685,211	6,259,571	6,337,699	6,678,367	1,582,872

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*Benefits not now payable to public hospitals as expenditure included in general expenditure of public hospitals from 1 April 1964.

†Previously included benefits to public hospitals.

TABLE 1—Health Benefits, etc.—*continued*

—	1955–56	1956–57	1957–58	1958–59	1959–60	1960–61	1961–62	1962–63	1963–64	1964–65
Subdivision IV—Pharmaceutical Benefits										
	£	£	£	£	£	£	£	£	£	£
Drugs supplied by—										
Chemists	3,949,164	4,475,606	4,353,752	4,973,558	5,787,684	6,605,889	7,433,732	7,747,082	7,672,813	8,721,289
Medical practitioners	15,951	17,934	22,463	27,274	32,126	48,736	73,937	70,199	61,390	71,257
Institutions	74,030	79,017	90,326	111,511	136,492	143,532	170,669	170,339	179,363	13,590
Private hospitals	..	..	..	..	..	..	..	..	..	61,078
Refund of Customs duty to wholesalers	..	..	..	..	..	..	..	71,340	..	..
	4,039,145	4,572,557	4,466,541	5,112,343	5,956,302	6,798,157	7,678,338	8,058,960	7,913,566	8,867,214
*Subdivision V—Supplementary Benefits**										
Radiological services	448,374	474,369	471,792	471,202	489,459	510,234	522,997	541,547	556,891	285,562†
Laboratory services	277,458	338,673	414,863	471,795	585,644	732,964	882,290	1,052,566	1,180,308	1,031,172†
Physiotherapy services	64,863	66,499	61,569	61,679	63,005	61,916	64,078	69,356	98,503	105,537
Specialist service (neurosurgery)	3,181	2,872	2,990	3,790	5,003	3,324	5,784	4,013	4,585	4,612
District nursing services	150,117	162,016	181,892	195,518	206,587	222,916	234,490	246,954	296,642	..†
Dental services	798,756	906,420	932,451	940,590	1,000,877	1,000,561	1,045,629	1,142,209	1,181,635	1,196,526
Domestic assistance	7,744	9,977	12,560	12,365	14,757	14,039	10,834	12,008	14,166	12,430
Grants to public servants and dependants in respect of medical, hospital, etc., expenses while stationed overseas	2,620	2,275	4,332	4,562	5,086	4,610	6,554	7,707	6,577	7,456
Ambulance benefits	..	..	..	..	..	..	..	..	..	..
Artificial aids benefits .. .. .. (artificial limbs, hearing aids, contact lenses, etc.)	63,646	73,229	82,786	93,782	107,789	114,899	109,128	119,907	137,524	1,598†
Payments under section 26, Social Security Amendment Act 1943	1,359	81,263	117,782	206	..	95,830	13,899	50	..	31
Grants to intellectually handicapped children's parents' associations	581	1,280	1,074	885	1,641	2,247	2,494	2,788	5,037	10,141
	1,818,699	2,118,873	2,284,091	2,256,374	2,479,851	2,763,540	2,898,179	3,199,105	3,481,868	2,655,065
Grand totals	15,547,154	16,772,712	17,058,307	18,655,375	19,891,627	21,148,431	22,970,936	23,758,225	24,191,975	18,264,892
Recoveries	5,566	10,053	7,666	4,774	4,670	4,570	3,271	8,659	5,291	10,672
Net totals	15,541,588	16,762,659	17,050,641	18,650,601	19,886,957	21,143,861	22,977,665	23,749,566	24,186,684	18,254,220

*Benefits not now payable to public hospitals as expenditure included in general expenditure of public hospitals from 1 April 1964.
†Previously included benefits to public hospitals.

TABLE 2—Cost per Head in Health Districts and General Medical Services, 1964–65

Health District	Population as at 1 April 1964	Number of Doctors	Average Population per Doctor	Method of Claiming		Total Cost of General Medical Services, Excluding Milage	Average Amount Claimed per Doctor	Total Cost of General Medical Services, Including Milage	Cost per Head of Population
				Indirect	Direct				
				Per Cent	Per Cent	£	£	£	£ s. d.
Whangarei ..	90,300	52	1,736	..	100	127,395	2,450	138,572	1 10 8¼
Takapuna.. Auckland .. South Auckland	570,018	496	1,149	15	85	1,104,520	2,227	1,123,687	1 19 5¼
Hamilton	226,500	146	1,552	3	97	372,169	2,549	396,848	1 15 0¾
Rotorua	137,100	80	1,714	..	100	206,434	2,580	215,357	1 11 4¾
Gisborne	64,600	31	2,083	10	90	72,237	2,330	75,491	1 3 4½
New Plymouth ..	100,000	65	1,538	..	100	145,760	2,242	151,312	1 10 3¼
Napier	99,600	66	1,509	44	56	146,841	2,225	149,861	1 10 1
Wanganui ..	86,900	53	1,640	7	93	115,894	2,187	122,923	1 8 3¼
Palmerston North ..	126,800	69	1,838	40	60	150,327	2,179	155,216	1 4 5¾
Wellington Hutt ..	318,300	233	1,366	41	59	475,227	2,040	481,003	1 10 2¾
Greymouth Nelson ..	117,500	65	1,215	26	74	163,520	2,516	175,266	1 9 10
Christchurch ..	290,469	242	1,200	11	89	508,969	2,103	530,812	1 16 6½
Timaru	105,300	60	1,755	12	88	155,115	2,585	164,803	1 11 3½
Dunedin	153,800	112	1,373	20	80	264,648	2,364	278,676	1 16 2¾
Invercargill ..	103,600	58	1,786	30	70	121,412	2,093	129,350	1 4 11¾
Total ..	2,590,787	1,828	1,417	18	82	4,130,468	2,260	4,289,177	1 13 1½

TABLE 3—Infant, Neonatal, Post-neonatal, and Still-birth Mortality by Race, 1960–64

Year	Infants (Deaths Under One Year)			Neonates (Deaths Under 28 Days)			Post-neonates (Deaths 28 Days and Under One Year)			Still births		
	Total Population	European	Maori	Total Population	European	Maori	Total Population	European	Maori	Total Population	European	Maori
					Numbers							
1964	1,193	954	239	774	668	106	419	286	133	814	716	98
1963	1,269	1,004	265	827	704	123	442	300	142	824	699	125
1962	1,331	1,034	297	828	713	115	503	321	182	843	726	117
1961	1,490	1,104	386	952	795	157	538	309	229	909	802	107
1960	1,420	1,090	330	931	803	128	489	287	202	887	806	81
					*Rates**							
1964	19·1	17·5	30·0	12·4	12·3	13·3	6·7	5·2	16·7	12·9	13·0	12·2
1963	19·6	17·8	32·6	12·8	12·4	15·1	6·8	5·3	17·5	12·6	12·2	15·2
1962	20·4	18·0	38·8	12·7	12·4	15·0	7·7	5·6	23·8	12·8	12·5	15·0
1961	22·8	19·1	49·7	14·6	13·8	20·2	8·2	5·3	29·5	13·7	13·7	13·6
1960	22·6	19·7	44·5	14·8	14·5	17·3	7·8	5·2	27·2	13·9	14·3	10·8

*Infant, neonatal, and post-neonatal rates per 1,000 live born, still-birth rates per 1,000 total births (live plus still births).

TABLE 4—Principal Causes of Death

Causes of Death	Number of Deaths					Rates per 1,000,000 of Mean Population				
	1964	1963	1962	1961	1960	1964	1963	1962	1961	1960
Tuberculosis (all forms) ..	89	93	135	134	114	34	37	54	55	48
Syphilis and its sequelae ..	9	10	10	11	14	3	4	4	5	6
Acute poliomyelitis	..	..	..	7	..	..	..	..	3	..
All other infective and parasitic diseases	85	80	107	127	140	33	31	43	52	59
Malignant neoplasms ..	3,657	3,752	3,597	3,541	3,290	1,407	1,475	1,445	1,459	1,384
Diabetes mellitus	326	309	277	299	280	125	121	111	123	118
Vascular lesions of the central nervous system	2,740	2,776	2,729	2,738	2,537	1,055	1,092	1,097	1,128	1,067
Rheumatic fever and chronic rheumatic heart disease ..	208	241	251	231	220	80	95	101	95	93
Other diseases of the heart and hypertension	7,982	7,796	7,458	7,413	7,122	3,072	3,065	2,997	3,054	2,996
Influenza	150	41	191	35	28	58	16	77	14	12
Pneumonia	1,397	1,120	1,219	1,006	1,002	538	440	490	439	422
Bronchitis	747	632	580	594	497	288	249	233	245	209
Ulcer of stomach and duodenum	137	157	149	151	159	53	62	60	62	67
Nephritis and nephrosis ..	143	144	144	121	128	55	57	58	50	54
Motor vehicle accidents ..	429	420	420	405	356	165	165	169	167	150
Other accidents	789	715	738	738	736	304	281	297	304	310
All other causes	3,973	4,130	4,076	4,171	4,269	1,529	1,624	1,638	1,719	1,795
Totals	22,861	22,416	22,081	21,782	20,892	8,799	8,814	8,874	8,974	8,789

TABLE 5—Infant Mortality. Rates per 1,000 Live Born. International Comparison

Country	Year	Deaths Under One Year per 1,000 Live Born
Sweden	1963	15·0
Netherlands	1963	15·8
Norway	1962	17·7
New Zealand (European) ..	1963	17·8
Finland	1963	18·0
Denmark	1963	19·2
Australia	1963	19·5
New Zealand (both races) ..	1963	19·6
England and Wales	1963	21·1
Switzerland	1962	21·2
United States (white)	1962	22·3
Czechoslovakia	1963	22·0
Japan	1963	23·2
United States (both races) ..	1963	25·2
France	1963	25·5
Scotland	1963	25·6
Canada	1963	26·3
Republic of Ireland	1963	26·7
Northern Ireland	1963	27·0
West Germany	1963	27·0
Belgium	1963	28·3
Union of South Africa (white) ..	1963	29·0
East Germany	1962	31·1
Italy	1963	39·5

TABLE 6—Deaths of Infants Under One Year (European, Maori, and Total Population) 1960–64

Principal Cause of Death		Number of Deaths					Rates per 1,000 Live Births				
		1964	1963	1962	1961	1960	1964	1963	1962	1961	1960
Influenza, pneumonia, and bronchitis	E	105	113	106	113	99	1·9	2·0	1·8	1·9	1·8
	M	60	74	90	117	91	7·5	9·1	11·8	15·1	12·3
	T	184	187	196	230	190	2·9	2·9	3·0	3·5	3·0
Gastro-enteritis, diarrhoea, and dysentery	E	14	14	15	16	8	0·2	0·3	0·3	0·3	0·1
	M	25	17	34	37	48	3·1	2·1	4·4	4·8	6·5
	T	37	31	49	53	56	0·6	0·5	0·8	0·8	0·9
Congenital malformations	E	151	229	223	230	226	2·8	4·0	3·9	4·0	4·1
	M	25	31	28	39	27	3·1	3·8	3·7	5·0	3·6
	T	168	260	251	269	253	2·7	4·0	3·8	4·1	4·0
Birth injury	E	102	121	126	111	151	1·9	2·2	2·2	1·9	2·8
	M	20	28	21	31	27	2·5	3·4	2·7	4·0	3·6
	T	118	149	147	142	178	1·9	2·3	2·3	2·2	2·8
Asphyxia and atelectasis ..	E	153	122	105	137	135	2·8	2·2	1·8	2·4	2·4
	M	28	22	18	29	23	3·5	2·7	2·4	3·7	3·1
	T	181	144	123	166	158	2·9	2·2	1·9	2·6	2·5
Haemolytic disease of newborn	E	21	19	35	39	32	0·4	0·3	0·6	0·7	0·5
	M	1	4	1	2	1	0·1	0·5	0·1	0·3	0·1
	T	19	23	36	41	33	0·3	0·4	0·5	0·6	0·5
Immaturity	E	115	104	138	140	164	2·1	1·8	2·4	2·4	3·0
	M	18	20	23	36	27	2·3	2·5	3·0	4·6	3·6
	T	131	124	161	176	191	2·1	1·9	2·5	2·7	3·0
Other	E	293	282	286	318	275	5·4	5·0	5·0	5·5	5·0
	M	62	69	82	95	86	7·8	8·5	10·7	12·2	11·7
	T	355	351	368	413	361	5·7	5·4	5·6	6·3	5·9
Totals	E	954	1,004	1,034	1,104	1,090	17·5	17·8	18·0	19·1	19·7
	M	239	265	297	386	330	29·9	32·6	38·8	49·7	44·5
	T	1,193	1,269	1,331	1,490	1,420	19·1	19·6	20·4	22·8	22·6

TABLE 7—Deaths of Infants Under One Year by Causes Neonatal and Post-neonatal, 1960–64

A = Under one month. B = One month and under one year.

(Figures in parentheses denote those where prematurity was mentioned as associated with death.)

Principal Cause of Death		European		Maori	
		1963	1964	1963	1964
Influenza, pneumonia, and bronchitis	A	18 (12)	19 (8)	9 (3)	5 (3)
	B	95 ..	86 (1)	65 ..	55 ..
Gastro-enteritis, diarrhoea, and dysentery	A	2 ..	5 (1)	..	2 ..
	B	12 ..	9 ..	17 ..	23 ..
Congenital malformations ..	A	144 (12)	90 (7)	12 (2)	12 ..
	B	85 (1)	61 (1)	19 ..	13 ..
Birth injury	A	120 (65)	101 (60)	28 (13)	19 (11)
	B	1 (1)	1 ..	..	1 ..
Asphyxia and atelectasis ..	A	121 (89)	150 (101)	22 (20)	28 (19)
	B	1 ..	3 ..	..	..
Haemolytic disease of newborn ..	A	19 (11)	21 (9)	3 (1)	1 ..
	B	..	..	1 (1)	..
Immaturity	A	103 ..	114 ..	20 ..	18 ..
	B	1 ..	1 ..	..	..
Other	A	178 (113)	174 (105)	29 (15)	23 (11)
	B	104 ..	119 (1)	40 (1)	39 ..
Totals..	A	705	673	123	108
	B	299	280	142	131

TABLE 8a—Notifiable Diseases in New Zealand for the Year Ended 31 December 1964, Showing Distribution by Months: All Cases (Including Maoris)

Diseases	January	February	March	April	May	June	July	August	September	October	November	December	Total	1963	1962	1961	1960
Cerebro-spinal meningitis	4	1	1	3	2	12	10	1	6	3	4	..	47	52	36	36	53
Diphtheria	..	..	..	..	..	..	..	..	1	..	..	..	1	4	12	5	1
Dysentery—																	
Amoebic	..	..	..	..	1	..	..	1	..	..	..	..	2	7	8	7	4
Bacillary	47	40	34	35	67	45	178	257	96	166	103	55	1,123	489	412	501	408
Eclampsia	2	1	2	2	4	..	2	4	5	5	3	3	33	27	34	34	23
Enteric fever—																	
Paratyphoid	..	3	3	1	..	..	..	..	..	..	..	..	7	3	4	2	5
Typhoid	2	3	4	7	2	4	1	2	2	2	3	6	38	19	48	23	45
Food poisoning	45	29	50	21	..	5	47	3	26	58	29	28	341	435	462	818	162
Hydatids	3	3	2	4	2	1	4	4	1	1	2	2	29	38	41	47	71
Infective hepatitis	172	210	221	190	172	176	189	180	194	180	169	170	2,223	2,293	2,816	3,870	3,895
Leptospiral infections	15	8	13	5	3	4	2	3	16	23	44	33	169	128	148	104	178
Ophthalmia neonatorum	5	2	5	4	10	1	4	2	1	2	..	2	38	33	46	23	77
Pemphigus neonatorum	2	..	..	1	5	4	1	7	2	4	..	5	31	48	32	47	138
Poliomyelitis	No confirmed cases since 1962												..	..	5	214	4
Puerperal infections	1	5	4	4	3	5	..	2	1	2	1	5	33	41	34	27	30
Salmonella infections	16	80	52	44	11	14	6	3	6	57	22	6	317	136	106	126	128
Staphylococcal pneumonia and septicaemia of the newborn infant	..	..	1	..	..	1	..	..	5	..	1	..	8	4	2	2	9
Tetanus	2	..	..	2	..	2	..	1	2	1	4	1	15	24	28	24	27
Tuberculosis—																	
Pulmonary	38	58	58	65	80	70	64	75	82	90	79	89	848	984	1,028	1,082	1,180
Other forms	11	21	17	17	22	20	12	12	14	21	12	21	200	202	255	250	256
Undulant fever	..	3	..	3	1	4	2	1	..	2	1	1	18	29	31	39	42
Actinomycosis	..	..	..	..	..	1	..	..	..	..	..	..	1	4	2	3	..
Anchylostomiasis	2	2	..	..	2	1	1	..	..	..	..	..	8	11	13	1	8
Beri-beri	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Leprosy	..	2	1	..	1	..	..	..	..	1	..	..	5	5	3	2	1
Lethargic encephalitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3
Malaria	1	2	1	3	1	1	1	1	1	..	2	..	14	8	53	12	53
Pneumonic influenza	No longer notifiable												..	2	14	6	4
Taeniasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Trachoma	..	..	..	..	..	..	1	..	..	..	..	..	1	1	3	7	5
Totals	368	473	469	411	389	371	525	559	461	618	479	427	5,550	5,028	5,678	7,314	6,811

TABLE 8b—Notifiable Diseases in New Zealand for the Year Ended 31 December 1964, Showing Distribution by Health Districts: All Cases (Including Maoris)

Diseases	Whangarei (p. 90,240)	Takapuna (p. 156,680)	Auckland (p. 280,960)	South Auckland (p. 130,370)	Hamilton (p. 226,390)	Rotorua (p. 136,920)	Gisborne (p. 64,560)	Napier (p. 99,310)	New Plymouth (p. 99,980)	Wanganui (p. 86,890)	Palmerston North (p. 126,790)	Hutt (p. 162,190)	Wellington (p. 154,100)	Nelson-Greymouth (p. 117,270)	Christchurch (p. 289,820)	Timaru (p. 104,930)	Dunedin (p. 153,400)	Invercargill (p. 103,410)	Totals (Total Population 2,584,210)
Cerebro-spinal meningitis ..	..	7	8	4	8	5	5	2	..	2	..	2	2	..	..	1	..	1	47
Diphtheria	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Dysentery—																			
Amoebic	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	2
Bacillary	1	33	46	24	81	31	57	18	9	2	..	48	2	7	..	169	246	349	1,123
Eclampsia	..	1	5	2	5	2	1	..	1	..	..	1	3	2	3	..	4	3	33
Enteric fever—																			
Paratyphoid	..	..	2	1	..	..	..	..	1	..	..	..	..	..	3	..	..	..	7
Typhoid	2	1	1	6	..	4	4	..	4	7	1	3	3	..	2	..	..	..	38
Food poisoning	5	..	2	2	62	65	26	..	..	1	..	2	25	3	79	43	26	..	341
Hydatids	3	..	1	..	1	6	4	1	..	2	2	2	2	1	1	2	..	1	29
Infective hepatitis	133	189	156	312	244	137	84	82	158	162	119	123	87	30	121	37	45	4	2,223
Leptospiral infections	25	16	1	9	59	12	..	..	34	1	2	1	1	5	2	..	..	1	169
Ophthalmia neonatorum ..	..	..	..	..	..	2	..	5	..	1	..	..	4	..	26	..	..	..	38
Pemphigus neonatorum	..	1	..	1	1	1	1	..	..	..	..	..	4	3	18	1	..	..	31
Poliomyelitis	No confirmed cases since 1962																		..
Puerperal infections	..	..	..	3	1	..	..	1	1	..	..	1	14	..	10	..	2	..	33
Salmonella infections	13	22	29	13	27	14	8	2	3	12	1	..	13	4	73	21	61	1	317
Staphylococcal pneumonia and septicaemia of the newborn infant	..	1	..	..	5	..	..	..	1	..	..	..	..	..	..	..	1	..	8
Tetanus	1	..	3	2	..	2	..	1	2	2	..	1	..	..	1	..	..	..	15
Tuberculosis—																			
Pulmonary	43	39	111	42	84	74	34	23	16	21	21	43	74	31	88	14	67	23	848
Other forms	14	7	26	12	26	13	6	6	14	8	9	12	20	6	8	4	6	3	200
Undulant fever	1	..	..	2	5	..	..	..	2	2	2	..	..	1	1	..	1	1	18
Actinomycosis	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Anchylostomiasis	..	..	5	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	8
Leprosy	..	..	2	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	5
Lethargic encephalitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Malaria	..	2	1	1	1	..	..	..	1	..	..	..	2	..	5	..	1	..	14
Trachoma	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
Totals	241	319	400	438	612	369	231	141	248	223	159	239	256	93	442	292	460	387	5,550

TABLE 8c—Notifiable Diseases in New Zealand for the Year Ended 31 December 1964, Showing Distribution by Age and Sex: All Cases

Diseases	Under 1 Year		1 and Under 5		5 and Under 10		10 and Under 15		15 and Under 25		25 and Under 45		45 and Under 65		65 and Over		Totals		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Cerebro-spinal meningitis	10	4	7	4	5	3	3	1	3	2	1	1	1	1	..	1	30	17	47
Diphtheria	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	1
Dysentery—																			
Amoebic	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	2	..	2
Bacillary	30	16	125	146	167	137	53	50	40	78	98	147	11	15	2	8	526	597	1,123
Eclampsia	..	..	..	..	..	..	..	..	..	25	..	8	..	..	..	..	..	33	33
Enteric fever—																			
Paratyphoid	..	..	..	..	3	..	..	1	..	..	..	1	1	..	1	..	5	2	7
Typhoid	..	..	1	3	5	1	..	3	5	1	3	3	8	3	..	2	22	16	38
Food poisoning	..	1	12	9	5	38	34	15	33	59	49	35	23	17	5	6	161	180	341
Hydatids	..	..	..	..	3	..	2	..	3	3	7	2	4	2	1	2	20	9	29
Infective hepatitis	1	4	56	39	272	203	169	160	262	233	315	295	80	84	28	22	1,183	1,040	2,223
Leptospiral infections	..	..	..	..	4	1	10	1	40	2	84	4	21	2	..	..	159	10	169
Ophthalmia neonatorum	20	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	18	38
Pemphigus neonatorum	19	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	19	12	31
Poliomyelitis	No confirmed cases since 1962																..	..	..
Puerperal infections	..	..	..	..	..	..	..	..	..	17	..	16	..	..	..	..	..	33	33
Salmonella infections	32	13	27	36	15	12	20	9	26	29	30	23	21	16	2	6	173	144	317
Staphylococcal pneumonia and septicaemia of the newborn infant	4	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4	8
Tetanus	..	..	..	..	1	1	1	1	3	..	2	2	..	2	1	1	8	7	15
Tuberculosis—																			
Pulmonary	4	1	30	33	16	24	9	16	52	54	169	117	170	60	64	29	514	334	848
Other forms	1	4	10	2	2	8	8	5	12	20	38	37	22	20	6	5	99	101	200
Undulant fever	..	..	..	..	..	1	1	..	2	..	10	1	3	..	..	..	16	2	18
Actinomycosis	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1
Anchylostomiasis	..	..	..	..	..	..	..	..	1	3	3	..	..	1	..	..	4	4	8
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	3	2	..	..	..	..	..	..	3	2	5
Malaria	..	..	..	..	..	..	..	..	6	..	7	..	1	..	..	..	14	..	14
Pneumonic influenza	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1

TABLE 8d—Notifiable Diseases in New Zealand for the Year Ended 31 December 1964, Showing Distribution by Health Districts (Maoris)

Diseases	Whangarei (p. 21,625)	Takapuna (p. 4,325)	Auckland (p. 12,742)	South Auckland (p. 8,161)	Hamilton (p. 23,761)	Rotorua (p. 28,693)	Gisborne (p. 22,293)	Napier (p. 7,343)	New Plymouth (p. 6,347)	Wanganui (p. 19,614)	Palmerston North (p. 5,572)	Hutt (p. 4,347)	Wellington (p. 3,979)	Nelson-Greymouth (p. 1,921)	Christchurch (p. 2,684)	Timaru (p. 636)	Dunedin (p. 604)	Invercargill (p. 1,286)	Totals (Total Maori Population, 175,933)
Cerebro-spinal meningitis	..	2	3	2	3	3	3	1	..	1	..	2	..	..	..	..	..	..	20
Diphtheria	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery—																			
Amoebic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bacillary	..	1	3	7	16	7	37	1	2	1	..	1	..	..	..	2	..	1	79
Eclampsia	..	1	3	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	8
Enteric fever—																			
Paratyphoid	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Typhoid	2	..	..	3	..	2	3	..	3	6	..	2	1	..	..	..	..	..	22
Food poisoning	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2
Hydatids	2	..	..	..	..	3	3	1	..	..	..	1	..	1	..	1	..	..	12
Infective hepatitis	27	10	20	38	49	35	36	11	14	25	8	4	2	1	2	..	..	1	283
Leptospiral infections	2	1	..	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	6
Ophthalmia neonatorum	..	..	..	..	..	..	..	4	..	..	..	..	1	..	2	..	..	..	7
Pemphigus neonatorum	..	..	..	..	..	1	..	..	..	..	..	..	..	..	3	..	..	..	4
Poliomyelitis	No confirmed cases since 1962																		
Puerperal infections	..	..	..	2	1	..	..	..	1	..	..	..	..	..	..	..	..	..	4
Salmonella infections	6	5	4	1	5	4	6	..	..	9	..	..	..	..	..	..	..	..	40
Staphylococcal pneumonia or septicaemia of the newborn infant	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus	..	..	1	..	..	1	..	..	..	2	..	..	..	..	..	..	..	..	4
Tuberculosis—																			
Pulmonary	31	12	28	16	51	54	27	9	9	14	7	8	24	2	4	..	1	3	300
Other forms	10	..	14	9	16	9	5	2	7	6	4	3	5	1	1	..	1	2	95
Undulant fever	..	..	..	1	1	..	..	..	..	..	1	..	..	..	..	..	..	..	3
Actinomycosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anchylostomiasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Lethargic encephalitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Malaria	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	4
Trachoma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE 8e—Notifiable Diseases in New Zealand for the Year Ended 31 December 1964, Showing Distribution by Age and Sex (Maoris)

Diseases	Under 1 Year		1 and Under 5		5 and Under 10		10 and Under 15		15 and Under 25		25 and Under 45		45 and Under 65		65 and Over		Totals		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Cerebro-spinal meningitis	5	1	6	2	..	1	2	..	1	..	..	1	1	..	..	..	15	5	20
Diphtheria	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery—																			
Amoebic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bacillary	5	4	15	25	7	3	2	2	3	3	3	6	..	1	..	..	35	44	79
Eclampsia	..	..	..	..	..	..	..	..	..	4	..	4	..	..	..	..	..	8	8
Enteric fever—																			
Paratyphoid	..	..	..	..	2	..	..	..	..	..	..	..	1	..	..	..	3	..	3
Typhoid	..	..	1	3	4	1	..	2	2	..	1	1	5	1	..	1	13	9	22
Food poisoning	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	2	2
Hydatids	..	..	..	..	..	..	1	..	1	3	2	..	3	..	..	2	7	5	12
Infective hepatitis	1	3	22	11	49	23	20	24	29	35	29	23	5	5	3	1	158	125	283
Leptospiral infections	..	..	..	..	..	..	1	1	2	..	1	..	1	..	..	..	5	1	6
Ophthalmia neonatorum	3	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	4	7
Pemphigus neonatorum	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	4
Poliomyelitis	No confirmed cases since 1962																..	..	..
Puerperal infections	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	4	4
Salmonella infections	8	4	5	10	3	3	1	1	1	1	2	1	..	..	..	..	20	20	40
Staphylococcal pneumonia and septicaemia of the newborn infant	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	1	1	1	1	..	..	..	..	..	..	..	2	2	4
Tuberculosis—																			
Pulmonary	3	1	19	20	8	17	8	11	24	27	52	44	36	19	6	5	156	144	300
Other forms	1	3	8	1	1	4	5	3	7	10	18	17	14	3	..	..	54	41	95
Undulant fever	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	3	..	3
Actinomycosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anchylostomiasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Encephalitis lethargia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1
Malaria	..	..	..	..	..	..	..	..	1	..	3	..	..	..	..	..	4	..	4
Trachoma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE 9—Milk Sampling Summary for Year Ended 31 December 1964: Tests Applied and Results

N/C = Non-Complying W = Warnings P = Prosecutions

District	Total Samples				Fat		Solids Not Fat		Water		Reductase		Phosphatase	
	No.	N/C	W	P	No.	N/C	No.	N/C	No.	N/C	No.	N/C	No.	N/C
Whangarei	272	68	5	..	248	4	172	1	..	..	118	6	241	..
Takapuna	279	29	5	1	274	1	274	3	274	3	273	4	255	..
Auckland	747	93	2	1	738	20	734	16	4	3	734	5	687	..
South Auckland	241	33	..	..	236	5	237	4	241	..	236	5	241	..
Hamilton	750	15	4	..	201	1	201	4	201	2	514	3	74	..
Rotorua	84	12	..	..	83	3	83	..	27	7	79	..	80	..
Gisborne	143	20	..	..	66	..	66	..	66	..	28	7	..	..
Napier	54	2	1	..	31	..	31	..	12	..	..	..	1	..
New Plymouth	365	62	..	..	177	4	177	1	1	1	14	3	38	..
Palmerston North	225	14	11	3	101	5	96	7	16	7	3	..	15	..
Wanganui	122	20	..	..	77	..	77	..	..	..	22	2	19	1
Lower Hutt	299	24	5	2	285	..	285	8	285	2	..	..	32	..
Wellington*	3	..	..	..	3	..	3	..	..	..	..	..	..	..
Nelson†	202	46	25	..	179	10	178	21	16	5	105	5	47	..
Christchurch	950	148	129	1	807	10	807	119	4	..	210	24	23	1
Timaru	61	10	4	..	58	3	57	..	..	..	49	..	51	3
Dunedin	261	33	2	..	248	22	245	8	245	1	71	3	175	1
Invercargill	94	16	16	..	51	1	51	3	51	..	9	1	22	2
Totals	5,152	645	209	8	3,863	89	3,774	195	1,443	31	2,465	68	2,001	8

*Wellington health district without (field) Inspector of Health for most of year.

†Greymouth health district return now included with Nelson district.

TABLE 10—Food and Drug Sampling, 1964

—	Total Samples	Samples Non-complying	Warnings Issued	Prosecutions Recommended
Cereals and bread	4	..	..	..
Sausages	1,067	89	50	21
Minced meat	1,224	118	81	33
Bacon and ham	93	6	4	2
Fresh meat	168	22	11	9
Other meats	350	54	27	..
Meat pickling preparations	9	2	2	..
Fresh fish	17	3	..	..
Other fish	3	..	..	..
Cream	617	172	49	..
Milk shakes	572	212	59	..
Butter	128	6	4	..
Other milk products	52	3	3	..
Eggs	..	..	..	..
Salts and spices	3	..	..	..
Sauces, vinegar, and pickles	..	..	..	..
Sweetening substances and confectionery	1	..	..	..
Ice cream	739	360	113	8
Fruit, vegetables, and products	99	..	..	..
Edible fats and oils	..	..	..	..
Culinary essences	..	..	..	..
Beverages (nonalcoholic)	135	3	2	..
Beverages (alcoholic)	20	1	1	..
Drugs and proprietary drugs	21	5	2	..
Disinfectants	..	..	..	..
Miscellaneous	4	..	..	..
Total	5,326	1,056	408	73

Seizures and destruction, 85.
Food complaints investigated, 870: Prosecutions resulting, 39.

TABLE 11—Notification of Diseases Arising From Occupation

Source	Whangarei	Takapuna	Auckland	South Auckland	Hamilton	Rotorua	Gisborne	Napier	New Plymouth	Wanganui	Palmerston North	Hutt	Wellington	Nelson	Greymouth (included in Christchurch figures)	Christchurch	Timaru	Dunedin	Invercargill	Total
Official notifications	25	5	85	20	59	38	9	2	28	4	..	30	16	41	..	25	6	19	13	425
All sources—																				
1. Skin diseases arising from occupation—																				
Dermatitis due to oils and greases	..	1	14	2	1	5	2	..	..	1	1	1	2	1	..	7	2	3	..	43
Dermatitis due to solvents	..	..	33	2	1	2	1	2	..	..	..	3	3	..	..	5	..	3	..	55
Dermatitis due to various chemicals	1	..	20	..	..	..	..	..	3	..	..	..	3	..	..	6	3	..	..	36
Dermatitis due to cement	..	1	2	1	2	2	..	..	..	1	..	1	1	2	..	3	..	1	..	17
Dermatitis due to other causes	2	10	33	13	6	1	5	11	2	4	4	10	5	33	..	18	2	11	..	170
Other diseases of the skin	..	..	4	..	..	3	..	..	1	1	..	..	..	..	..	1	..	6	..	16
Subtotals	3	12	106	18	10	13	8	13	6	7	5	15	14	36	..	40	7	24	..	337
2. Diseases due to dusts, fumes, gases, vapours, or mists—																				
Chronic lead poisoning	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Phosphorus poisoning	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poisoning from any pesticide or agricultural chemical met with at work	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	4
Poisoning from any gas, fumigant, or refrigerant met with at work	..	..	2	..	1	8	..	..	..	..	..	..	..	..	..	..	..	1	..	12
Poisoning from any solvent met with at work	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2
Poisoning from any metal or salt of any metal met with at work	..	..	1	..	2	..	..	..	1	..	1	..	2	..	..	..	..	..	..	7
Diseases of respiratory system arising from occupation	..	..	..	..	..	..	..	1	1	..	..	5	1	..	..	..	..	..	1	9
Subtotals	..	..	6	1	3	9	1	2	2	..	1	5	3	..	..	..	1	1	1	36

3. Physical agents—																			
Compressed-air illness	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Eyesight—																			
(a) Non-traumatic	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2
(b) Trauma	..	2	..	1	..	2	..	2	..	..	..	10	11	..	..	..	..	..	..	28
Hearing	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	11	13
Other causes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Subtotals	..	2	2	1	1	4	..	2	..	..	..	10	11	..	..	..	..	1	11	45
4. Occupational diseases due to infectious agents—																			
Leptospirosis	25	..	1	9	47	12	..	..	32	1	..	..	..	5	..	2	..	..	1	135
Brucellosis	..	..	..	1	1	..	..	..	1	1	..	..	..	..	..	..	..	..	..	4
Other	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Subtotals	25	..	1	10	48	12	..	..	33	2	..	..	..	5	..	2	..	..	1	139
Total—All sources	28	14	115	30	62	38	9	17	41	9	6	30	28	41	..	42	8	26	13	557
(Totals—All sources for 1963)	25	19	109	28	80	53	8	9	25	12	8	16	36	57	..	46	8	30	14	583

TABLE 12—Supervision of Workers Engaged in Lead and Electroplating Processes

District	Lead Processes				Electroplating Processes								Number of Men Otherwise Affected
	Number of Firms	Number of Workers Under Super-vision	Number of Examina-tions	Number of Workers Sus-pended	Number of Firms Engaged in		Number of Workers Under Supervision		Number of Examinations		Number of Men With Chrome Ulcers		
					Chrome-plating	Other Plating Only	Chrome	Other	Chrome	Other	On Hands	On Nasal Septum	
Whangarei	8	61	72	..	2	..	3	..	22	..	..	..	..
Takapuna	23	328	675	..	7	2	25	9	298	18	..	9	..
Auckland	82	992	1,841	2	26	20	74	67	710	212	1	3	8
South Auckland ..	3	16	29	..	3	..	7	..	32	..	1	..	..
Hamilton	21	207	332	..	3	..	21	..	35	..	..	..	..
Rotorua	7	50	50	..	1	..	4	..	17	..	..	..	..
Gisborne	5	66	66	..	1	..	1	..	14	..	..	..	..
Napier	2	5	20	..	4	..	12	..	48	..	..	..	..
New Plymouth ..	2	9	37	..	1	..	3	..	30	..	..	..	..
Wanganui	5	17	22	..	1	..	3	..	11	..	..	..	..
Palmerston North ..	19	63	96	..	2	..	6	..	72	..	..	..	..
Lower Hutt	17	438	1,840	4	7	1	18	1	142	10	..	..	..
Wellington	14	142	677	1	..	..	..	..	..	..	..	..	..
Nelson*	2	9	9	..	2	..	6	..	45	..	1	..	..
Christchurch	11	119	67	..	15	3	79	6	545	25	12	12	..
Timaru	10	39	39	..	1	..	2	..	20	..	..	..	..
Dunedin	15	78	165	..	4	1	26	3	241	27	..	5	1
Invercargill	9	63	140	..	2	..	8	..	11	..	..	1	..
Totals ..	255	2,702	6,781	7	91	29	326	90	2,473	316	15	30	9
Totals for 1963 ..	(257)	(2,545)	(6,896)	..†	(122)		(352)		(2,702)		(49)		..

*Includes figures for Greymouth health district.
†No equivalent 1963 figures available.

TABLE 13—Attendances at Industrial Health Centres and Waterfront Clinics

District	Centre	Attendances		Total	Referred to	
		First	Reattendance		Own Doctor	Hospital
Takapuna ..	New Lynn[1] ..	..	..	..	..	..
	Penrose ..	5,333	5,132	10,465	337	499
Auckland ..	*Queen's Wharf ..	5,801	4,841	10,642	957	826
	Mount Wellington	1,044	1,019	2,063	126	85
Rotorua ..	Wairakei[2] ..	4	..	4	3	..
Lower Hutt ..	Petone ..	804	927	1,731	100	126
Wellington ..	*Waterfront ..	4,570	1,260	5,830	1,076	626
	Woolston ..	734	574	1,308	144	48
Christchurch	Hornby ..	232	41	273	68	18
	*Lyttelton Waterfront.. ..	2,562	1,609	4,171	214	22
Timaru ..	Industrial Foreshore[3] ..	180	111	291	13	19
Dunedin ..	Foreshore ..	776	489	1,265	65	81
	Mobile.. ..	325	919	1,244	46	1
	Totals ..	22,365	16,922	39,287	3,149	2,351
	(Totals, 1963)	(21,822)	(17,364)	(39,186)	(2,845)	(1,854)

*Financial support from Waterfront Industry Commission; remainder with financial support from the Workers' Compensation Board, except Wairakei.

[1] Building to be commenced shortly.

[2] Established primarily in connection with hearing-conservation programme.

[3] Closed 31 December 1964.

TABLE 14—Medical Examination of Young Workers

Year	Number Examined			Number Rejected		
	Male	Female	Total	Male	Female	Total
1964 ..	1,861	1,374	3,235	2	1	3
(1963) ..	(1,922)	(1,471)	(3,393)	..	..	..

TABLE 15—Medical and Nursing Services in Private Industrial Undertakings and Government Factories

Terms of Employment	Number of Doctors and Nurses Employed	Approximate Number of Employees in Industrial Units Covered								Totals	
		0–200		201–500		501–1,000		More than 1,000		All Units	
		Number	Employees	Number	Employees	Number	Employees	Number	Employees	Number	Employees
1. Industrial medical officers—											
(a) Medical officers on contracts attracting 60 per cent subsidy*	27	5	869	10	2,902	8	5,833	7	10,390	30	19,994
(b) Medical officers on other contracts*	7	1	24	7	2,119	1	566	1	1,200	10	3,909
All medical officers ..	34	6	893	17	5,021	9	6,399	8	11,590	40	23,903
2. Industrial nurses—											
(a) Whole time†	67	4	778	27	9,882	15	10,482	18	28,285	64	49,427
(b) Part time (more than 10 hours weekly)	4	1	150	3	723	..	..	..	..	4	873
All nurses	71	5	928	30	10,605	15	10,482	18	28,285	68	50,300
Registered factories, 1964 ..	..	20,189		100		51				20,340	272,346

*Six doctors have a contract with more than one firm.

†Three firms each employ two nurses.

TABLE 16—Maternal Deaths, 1963 and 1964

Int. List No.	Causes of Death	Number of Deaths		Rate per 1,000 Live Births	
		1963	1964	1963	1964
	A. European				
642	Toxaemia of pregnancy—				
·0	Hypertensive disease arising during pregnancy	1	..	0·02	..
·1	Renal disease arising during pregnancy	1	..	0·02	..
·2	Pre-eclampsia of pregnancy	1	..	0·02	..
·3	Eclampsia of pregnancy	3	1	0·05	0·02
·5	Other	4	1	0·07	0·02
		10	2	0·18	0·04
644	Other haemorrhage of pregnancy	1	..	0·02	..
645·0	Ectopic pregnancy without mention of sepsis	..	1	..	0·02
648·3	Other complications arising from pregnancy	1	..	0·02	..
650	Abortion without mention of sepsis—				
·0	Spontaneous	..	1	..	0·02
651	Abortion with sepsis—				
·0	Spontaneous or unspecified	..	2	..	0·04
·2	Induced for other than medical reasons	1	1	0·02	0·02
		1	3	0·02	0·06
670	Delivery complicated by placenta praevia or antepartum haemorrhage	3	..	0·05	..
671	Delivery complicated by retained placenta	..	1	..	0·02
672	Delivery complicated by other postpartum haemorrhage	1	..	0·02	..
673	Delivery complicated by abnormality of bony pelvis	..	1	..	0·02
674	Delivery complicated by disproportion or malposition of foetus	1	1	0·02	0·02
677	Delivery with other trauma	..	1	..	0·02
678	Delivery with other complications of childbirth	..	1	..	0·02
682	Puerperal phlebitis and thrombosis	2	..	0·04	..
684	Puerperal pulmonary embolism	1	1	0·02	0·02
687	Cerebral haemorrhage in the puerperium	..	1	..	0·02
	Totals, including illegal abortion	21	14	0·37	0·26
	Totals, excluding illegal abortion	20	13	0·35	0·24
	B. Maoris				
642	Toxaemia of pregnancy—				
·5	Other	..	1	..	0·13
651	Abortion with sepsis—				
·0	Spontaneous or unspecified	..	1	..	0·13
652	Abortion with toxaemia without mention of sepsis—				
·0	Spontaneous or unspecified	..	1	..	0·13
670	Delivery complicated by placenta praevia or antepartum haemorrhage	..	1	..	0·13
672	Delivery complicated by other postpartum haemorrhage	1	..	0·12	..
674	Delivery complicated by disproportion or malposition of foetus	..	1	..	0·13
675	Delivery complicated by prolonged labour of other origin	1	..	0·12	..
677	Delivery with other trauma	1	..	0·12	..
678	Delivery with other complications of childbirth	..	1	..	0·13
681	Sepsis of childbirth and the puerperium	1	..	0·12	..
684	Puerperal pulmonary embolism	1	..	0·12	..
	Totals, including illegal abortion	5	6	0·62	0·75
	Totals, excluding illegal abortion	5	6	0·62	0·75

Deaths in 1964 Not Classified to Pregnancy and Childbirth but Associated Therewith

Cause of Death	Number
A. European	
Epilepsy	1
Rheumatic heart disease	2
Coronary heart disease	1
Lobar pneumonia	1
Acute appendicitis	1
B. Maori	
Rheumatic heart disease	3
Coronary heart disease	1
Chronic pyelonephritis	1
Congenital heart disease	1

TABLE 17—Statistics of Maternity Services and Cases, 1964

——	Public Hospitals	Private Hospitals	St. Helens Hospitals	Alexandra Home, Wellington	Totals, all Hospitals
Number of hospitals	152	29	2	1	184
Number of beds	2,779	317	85	19	3,200
Admissions for ante-natal treatment	5,473	245	209	24	5,951
Admissions for delivery	52,500	7,089	2,377	439	62,405
Total	57,973	7,334	2,586	463	68,356
Confinements—					
Over 42 weeks	850	80	31	..	961
36–42 weeks	47,481	6,683	2,252	430	56,846
28–36 weeks	1,798	142	37	..	1,977
Under 28 weeks	86	4	..	..	90
Total	50,215	6,909	2,320	430	59,874
Surgical inductions	4,903	462	88	46	5,499
Abortions	67	4	..	..	71
Complications—					
Instrumental deliveries	2,475	546	127	55	3,203
Caesarean section	2,759	121	58	4	2,942
Manual removal of placenta	911	100	47	3	1,061
Accidental haemorrhage	818	28	16	..	862
Placenta praevia	372	17	19	3	411
Postpartum haemorrhage	2,746	106	132	4	2,988
Eclampsia	49	9	..	1	59
Vacuum extractions	30	..	..	..	30
Total	10,160	927	399	70	11,556
Puerperal pyrexia	815	61	1	..	877
Transfer before delivery	868	12	9	9	898
Transfer after delivery	972	23	..	..	995
Total	1,840	35	9	9	1,893
Infant deaths—					
Born alive	555	23	13	2	593
Still births	661	73	17	2	753
Total	1,216	96	30	4	1,346

TABLE 18—Notification of Number of Persons Seen for the First Time at the Venereal Disease Clinics Run by the Hospitals at Auckland, Wellington, Christchurch, and Dunedin

Year	Auckland		Wellington		Christchurch		Dunedin		Totals		Grand Totals
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
	Number of persons seen for the first time and found to be suffering from syphilis										
1960 ..	41	9	1	3	..	..	1	1	43	13	56
1961 ..	12	6	6	2	2	..	1	..	21	8	29
1962 ..	17	5	1	1	5	2	2	..	25	8	33
1963 ..	46	3	5	1	4	3	..	..	55	7	62
1964 ..	45	4	7	2	14	3	3	5	69	14	83
	Number of persons seen for the first time and found to be suffering from gonorrhoea										
1960 ..	372	102	306	37	100	40	33	2	811	181	922
1961 ..	333	129	328	52	170	49	21	18	852	248	1,100
1962 ..	333	115	320	61	204	60	24	10	881	246	1,127
1963 ..	416	104	347	69	152	50	31	17	946	240	1,186
1964 ..	532	165	304	46	211	89	36	21	1,083	321	1,404

TABLE 19—Hospital Works Programme as at 31 March 1965 (Projects over £10,000 only*)

—	Total Estimated Cost	Expenditure up to 31 March 1965	Expenditure, 1964–65	Estimated Expenditure, 1965–66	Estimated Expenditure, 1966–67	Estimated Expenditure, 1967–68	To Complete
	£	£	£	£	£	£	£
Category A	23,152,874	12,439,194	2,185,654	5,054,633	2,558,200	1,557,956	1,542,891
Category B	77,976	1,556	..	66,912	9,508	..	..
Category C	197,589	10,129	..	159,343	28,117	..	..
Subtotals	23,428,439	12,450,879	2,185,654	5,280,888	2,595,825	1,557,956	1,542,891
Category D	491,894	515	..	200,322	102,057	39,000	150,000
Category E	15,342,530	170,606	8,276	891,877	3,508,797	3,592,034	7,179,216
Category F	17,951,470	4,094	..	844,165	3,046,412	4,043,672	10,013,127
Category G	6,226,500	..	..	117,500	382,000	431,000	5,296,000
Subtotals	40,012,394	175,215	8,276	2,053,864	7,039,266	8,105,706	22,638,343
Totals—							
31/3/65	63,440,833	12,626,094	2,193,930	7,334,752	9,635,091	9,663,662	24,181,234
31/3/64	52,697,042	11,604,924	4,856,188	7,115,360	8,618,154	8,652,926	16,705,678

*In addition the total value of projects £1,000 to £10,000 was approximately £650,000 for the year ended 31 March 1965.

Category A = Work commenced.
Category B = Acceptance of tenders authorised.
Category C = Tenders called.
Category D = Working drawings approved.
Category E = Sketch plans approved.
Category F = Preparation sketch plans authorised.
Category G = Provisionally approved.

TABLE 20—Hospital Building Work

A. Works Completed

1. New Hospitals, Wards, and Ancillary Services

The following were completed during the year:

Location and Work	Number of Beds		
	General	Maternity	Old People's Homes
Waitakere: maternity hospital	..	60	..
Rotorua: maternity block	..	40	..
Whakatane: stage I	60	..	..
Pahiatua: ward replacement	11	..	..
Hokitika: wards	60	..	..
Oamaru: clinical and ward block	32	..	..
Dunedin: Fulton Home	..	..	60

2. Nurses' Homes and Other Staff Accommodation

	Number of Staff Beds
Waitakere: maternity hospital	75
Whakatane: nurses' home	44
Middlemore: nurses' home	210

3. Ancillary Services

Auckland	Middlemore boilerhouse.
Auckland	Roading and services.
Auckland	Resident Medical Officer's quarters.
Auckland	North Shore alterations and additions.
Auckland	Middlemore kitchen additions.
Auckland	Middlemore animal house.
Auckland	Green Lane roading and tunnel.
Auckland	Green Lane diversion of services.
Waikato	Te Kuiti stage II additions.
Waikato	Workshops.
Tauranga	Roading.
Cook	Kitchen and cafeteria.
Wanganui	Boilerhouse additions.
Palmerston North	Bulk store.
Palmerston North	Medical block.
Wellington	Hutt boilerhouse additions
Wellington	Ward 5 lifts.
Wairarapa	Masterton tutorial.
Marlborough	Boilerhouse additions.
Nelson	Chapel.
Greymouth	Electrical reticulation.
Burwood	Boilerhouse.
Burwood	Electrical reticulation.
Christchurch	Coronation ward alterations.
Ashburton	Chalmers ward additions.
Oamaru	Roading.
Vincent	Dunstan mortuary and store.
Otago	Wakari chapel.

TABLE 20—Hospital Building Work—*continued*

B. Works in progress

Construction is under way or tenders have been accepted for the following:

1. Patient and Service Accommodation

Location and Work	Number of Beds		
	General	Maternity	Old People's Homes
Kaitaia: ward block	88	..	..
National Women's: isolation block	20	28	..
Auckland: acute block stage I	302	..	..
Taupo: maternity hospital	..	8	..
Taumarunui: ward block	60	..	..
Cook: maternity hospital	40	..	..
Stratford: ward block	30	..	..
Horowhenua: hospital stage I	50	..	..
Wellington: Seddon block	150	..	..
Porirua: maternity hospital	..	47	..
Hutt: maternity wing	..	69	..
Karamea: maternity hospital	..	3	..
Kynnersley Home	..	..	27
Invercargill: Lorne addition	46	..	..

2. Nursing and Other Staff Accommodation

Construction is under way or tenders have been accepted for the following:

	Number of Staff Beds
Tauranga: nurses' home	83
Taumarunui: nurses' home additions	25
Cook: maternity hospital	22
Horowhenua: nurses' home	23
Porirua: maternity hospital	37
Hutt: nurses' home	102
Timaru: Lindsay Home	52

3. Ancillary Services

Construction is under way or tenders have been accepted for the following:

Kaitaia	Boilerhouse.
Auckland	Wallace block lifts.
Auckland	National Women's cytology unit.
Auckland	Green Lane administration block.
Auckland	Warkworth hospital additions.
Auckland	Wallace block lift.
Auckland	Boardroom suite.
Waikato	Laundry plant.
Waikato	Supervoltage unit.
Taumarunui	Convert ward to clinical services.
Cook	Boilerhouse and laundry.
Wairoa	Roading.
Hastings	Workshops.
Taranaki	Westown Chapel.
Taranaki	New Plymouth boilerhouse addition.
Stratford	Boilerhouse addition.
Hawera	Steam reticulation.
Palmerston North	Horowhenua boilerhouse.
Wellington	Nurses' chapel.
Wellington	Electrical centre.

TABLE 20—Hospital Building Work—*continued*

3. Ancillary Services—continued

Nelson	Steam reticulation.
Nelson	Convert wards to maternity.
Nelson	Laundry machinery.
Greymouth	Kitchen block.
Christchurch	Boilerhouse.
Christchurch	Mains cabling
Timaru	Kitchen alterations.
Dunedin	Clinical services block.
Dunedin	Occupational and physiotherapy block.
Dunedin	Wakari psychiatric unit.
Balclutha	Store.
Invercargill	Kew laundry.

TABLE 21—Results of Mass X-ray Examinations

Year	Number Examined	Tuberculosis			Active Cases per 1,000 Examined	Other Lung Conditions	Cardio-vascular Disease
		Healed	Inactive	Active			
1960	257,766	2,018	758	246	0·96	1,850	813
1961	214,497	1,396	609	212	0·98	1,418	789
1962	203,455	1,519	584	169	0·83	1,492	558
1963	270,169	1,643	878	214	0·79	2,104	697
1964	351,743	1,602	1,073	175	0·49	2,138	927

TABLE 22—Morbidity: Notification of New Cases of Tuberculosis During Statistical Year—Incidence of Type of Disease by Race and Sex with Number and Rate per 10,000 Estimated Mean Population

Year	Respiratory						Non-respiratory						All Types		
	European			Maori			European			Maori			Both Races		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1960	481	306	787	197	196	393	79	73	152	55	49	104	812	624	1,436
	4·3	2·8	3·5	24·3	25·0	24·6	0·71	0·66	0·69	6·8	6·3	6·5	6·8	5·3	6·0
1961	447	249	696	215	171	386	72	80	152	51	47	98	785	547	1,332
	3·9	2·2	3·0	25·2	20·7	23·0	0·63	0·71	0·67	6·0	5·7	5·8	6·4	4·5	5·4
1962	423	234	657	193	178	371	74	66	140	52	63	115	742	541	1,283
	3·6	2·0	2·8	22·1	21·1	21·6	0·63	0·57	0·60	5·9	7·5	6·7	5·9	4·3	5·2
1963	423	242	665	176	143	319	69	53	122	41	39	80	708	478	1,186
	3·6	2·1	2·8	19·1	16·0	17·6	0·58	0·45	0·51	4·4	4·4	4·4	5·5	3·8	4·7
1964	358	190	548	156	144	300	43	62	105	54	41	95	613	435	1,048
	2·9	1·6	2·2	16·0	15·2	15·7	0·35	0·51	0·43	5·6	4·3	4·9	4·6	3·3	4·0

TABLE 23—Results of Mantoux Testing

Race	Year	Age Groups (Years)														Total BCG Vaccinations
		0–4		5–9		10–14		15–19		20–24		25–34		35+		
		Test	Pos.	Test	Pos.	Test	Pos.	Test	Pos.	Test	Pos.	Test	Pos.	Test	Pos.	
European	1964	1,233	46 3·7	29,958	725 2·4	42,603	3,872 9·0	4,938	1,143 23·1	580	296 51·0	562	268 47·7	1,194	481 40·3	27,645
Maori	1964	1,972	71 3·6	4,506	401 8·9	5,401	882 16·3	394	112 28·4	101	59 58·4	116	69 59·4	50	38 76·0	5,389
Combined total ..	1964	3,205	117 3·6	34,464	1,126 3·2	48,004	4,754 9·9	5,332	1,255 23·5	681	355 52·1	678	337 49·7	1,244	519 41·7	33,034

TABLE 24—Mortality: Deaths From Tuberculosis During Statistical Year, Mortality by Type of Disease, by Race and Sex, with Number and Rate per 100,000 Estimated Mean Population

Year	Respiratory									Non-respiratory									All Types								
	European			Maori			Both Races			European			Maori			Both Races			European			Maori			Both Races		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1960—																											
Number ..	54	23	77	12	10	22	66	33	99	4	7	11	4	4	8	8	11	19	58	30	88	16	14	30	74	44	118
Rate ..	4·8	2·1	3·5	14·8	12·7	13·8	5·5	2·8	4·2	0·4	0·6	0·5	4·9	5·1	5·0	0·7	0·9	0·8	5·2	2·7	4·0	19·7	17·8	18·8	6·2	3·7	5·0
1961—																											
Number ..	56	30	86	14	16	30	70	46	116	8	1	9	5	4	9	13	5	18	64	31	95	19	20	39	83	51	134
Rate ..	4·9	2·7	3·8	16·4	19·4	17·9	5·7	3·8	4·8	0·7	0·1	0·4	5·9	4·9	5·4	1·1	0·4	0·7	5·6	2·8	4·2	22·3	24·3	23·3	6·8	4·2	5·5
1962—																											
Number ..	59	20	79	20	16	36	79	36	115	6	3	9	7	4	11	13	7	20	65	23	88	27	20	47	92	43	135
Rate ..	5·1	1·7	3·4	22·5	18·6	20·6	6·3	2·9	4·6	0·5	0·3	0·4	7·9	4·7	6·3	1·0	0·6	0·8	5·6	2·0	3·8	30·4	23·3	26·7	7·4	3·5	5·4
1963—																											
Number ..	46	17	63	11	8	19	57	25	82	..	5	5	5	1	6	5	6	11	46	22	68	16	9	25	62	31	93
Rate ..	3·9	1·5	2·7	12·0	9·0	10·5	4·5	2·0	3·2	..	0·4	0·2	5·4	1·1	3·3	0·4	0·4	0·5	3·9	1·9	2·9	17·4	10·1	13·8	4·9	2·4	3·7
1964— ..																											
Number ..	48	7	55	7	9	16	55	16	71	5	3	8	6	4	10	11	7	18	53	10	63	13	13	26	66	23	89
Rate ..	4·0	0·6	2·3	7·3	9·7	8·5	4·2	1·2	2·7	0·4	0·2	0·3	6·3	4·3	5·3	0·9	0·6	0·7	4·4	0·8	2·6	13·6	14·0	13·8	5·1	1·8	3·4

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